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ROLE OF INSIDE DIRECTORS IN MITIGATING NEGATIVE EFFECTS OF OUTSIDE DIRECTORS' BUSYNESS

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ROLE OF INSIDE DIRECTORS
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ABSTRACT

In this study, I investigate the effect of outside directors' busyness on firm performance, and how the presence of a certified inside director (CID) on the board alters the busyness effect. Busy outside directors are over-stretched to provide adequate monitoring. Certified inside directors (CIDs), inside directors holding a directorship at an unaffiliated firm, have director labor market incentives to focus on their own firm's performance and share firm-specific information to outside directors for effective monitoring. I find that the negative effect of outside directors' busyness on firm performance is mitigated when a firm's board includes a certified inside director (CID). This mitigating effect is more pronounced in firms where the costs of external monitoring and operational complexity are high. Director busyness has negative effects on both the level and the value of the cash holdings and the likelihood of earnings restatements, but these adverse busyness effects are mitigated by the presence of a certified inside director. The results are robust even after controlling for endogeneity with a wide variety of econometric techniques.

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CHAPTER ONE
INTRODUCTION

Multiple directorships are certification of directors' expertise (Fama and Jensen, 1983) and facilitate broadening directors' social and business connections (Cashman, Gillan, and Whitby, 2010; Coles, Daniel and Naveen, 2012). However, directors who hold multiple directorships are often criticized for being too busy to provide adequate board service. In this study, I investigate whether certain board characteristics allow firms to benefit from the expertise and connections of busy directors without suffering from negative consequences of their busyness.

The issue of the impact of director busyness on firm performance and firms' responses to increases in their directors' outside responsibilities has received considerable attention, both in the academic literature (e.g., Ferris, Jagannathan, and Pritchard, 2003; Fich and Shivdasani, 2006) and in the business press. A Wall Street Journal article published on Feb. 29, 2012 reported that the average time commitment required for a single board directorship has increased from 210 hours per year in 2006 to 228 hours per year in 2011.[1] Accordingly, some major institutional investors, such as Black-Rock Inc. and the California State Teachers' Retirement System, currently oppose the reelection of directors with more than four directorships.[2] It has been argued that

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[1] "Are Executives Overboarded", Wall Street Journal, February 29, 2012, Byline: Joann S. Lublin
[2] "How Many Board Seats Make Sense", Wall Street Journal, January, 2016, Byline: Joann S. Lublin

directors who are too busy (have too many directorships) may be less effective as corporate monitors and thus may negatively affect firm performance (Fich and Shivdasani, 2006). Serving on multiple boards, however, can provide outside directors with valuable experience and reputational benefits. As better directors are more sought-after, directors with multiple directorships may be, or may be perceived to be, of higher quality (Fama and Jensen, 1983). Evidence of the relation between firm performance and director busyness is mixed in the finance literature, but the view that busy directors are ineffective tends to get more support in practice. The 2015 Spencer Stuart Board Index survey reports that 77% of S&P 500 firms now place some sort of restriction on holding multiple directorships.[3] Several director and investor organizations also adopted resolutions recommending limits on multiple directorships (Field, Lowry and Mkrtchyan, 2013).[4] Therefore, based on the view that busyness hinders effective board service, companies tend to forgo the possible benefits of having higher quality, but yet more busy directors on a board by limiting their directors' external board positions.

Outside directors play an important role in corporate governance to monitor management and to protect the shareholders' interests (Jensen and Meckling, 1976). The main challenge for outside directors serving on multiple boards is that they may be over-stretched and unable to play an effective role as monitors (Fich and Shivdasani, 2006). Effective monitoring requires firm-specific information (Duchin, Matsusaka and

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[3] Stuart Spencer US Board Index 2015, https://www.spencerstuart.com/research-and-insight/
[4] National Association of Corporate Directors, the Council of Institutional Investors, and Institutional Shareholder Services are among the director and investor organizations recommended various imitations with respect to multiple directorships.

Ozbas, 2010). Time-constraints resulting from multiple directorships may make the information acquisition task even more challenging for outside directors. Inside directors, on the other hand, possess more firm-specific knowledge (Fama and Jensen, 1983) and they are valuable in enhancing a board's advisory and monitoring functions (Raheja, 2005; Adams and Ferreira, 2007; Harris and Raviv, 2008). Because inside directors reap reputational benefits from improved firm performance, they have incentives to reveal information to the board (Raheja, 2005). By providing valuable firm-specific information, inside directors may lessen the effort required by outside directors to acquire information and thus may enable busy outside directors to provide adequate oversight. Therefore, inside directors may play an important role in enhancing the monitoring ability of outside directors, despite their busyness.

Not all inside directors may have the incentives to reveal information to outside directors. Due to agency problems and dependence on the CEO for their career prospects, some inside directors may lack the incentives to take an effective monitoring and advisory role, and they may be reluctant to take a stance against an entrenched CEO in the boardroom (Helmich and Brown 1972; Helmich, 1974; Fee and Hadlock, 2004). However, inside directors who are not the CEO of the firm and who hold a directorship at an external firm as an outside director are a special kind of inside directors (Masulis and Mobbs, 2011). These non-CEO inside directors with external directorships have career and reputational incentives to be more focused on their own firm's performance in order to maintain outside directorships. Due to the labor market certification incentives for the

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inside directors holding external directorships, Masulis and Mobbs (2011) label these directors as "Certified inside directors (CID)". With valuable firm-specific knowledge and less reliance on their own CEO for career advancement, non-CEO inside directors holding external directorships (here after, CIDs) can be a valuable source of inside information for outside directors.

In this study, I investigate the effect of outside directors' busyness on firm performance, and how the presence of certified inside directors (CID) on the board alters the busyness effect. Extant literature provides evidence that outside directors' busyness negatively affects firm performance (Fich and Shivdasani, 2006) and the presence of certified inside directors (CID) on a board has positive effect on firm performance (Masulis and Mobbs, 2011). Based on these two opposing effects, I examine whether the negative busyness effect of overstretched outside directors can be mitigated by the CID's reputational incentives to enhance his or her own firm's performance. In this analysis, I define outside directors as directors who are not employed by the firm or not linked with the firm or its affiliates (i.e., independent director). I measure the busyness of a director as the total number of directorships held by the director and classify a director as "busy" if he or she holds three or more directorships. If a majority of outside directors on a firm's board are busy, I classify the board as a "Busy Board". I define certified inside directors (CID) as the non-CEO executives who hold a directorship in their own firm as inside director as well as a directorship at an unaffiliated firm as outside director. I hypothesize that, by providing necessary firm-specific information, certified inside directors (CID) will

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help reduce the time and commitment required from outside directors to perform effective board service. Therefore, the presence of a certified inside director (CID) on the board will mitigate the negative consequences associated with outside directors' busyness. Using the firm-fixed effect regression framework, similar to the framework of Fich and Shivdasani (2006), I find that directors' busyness negatively affects firm performance (Tobin's Q and Return on Assets) and the presence of CIDs on a board mitigates this negative effect. This result is robust even after I address the potential endogeneity issues.

I hypothesize that the sharing of firm-specific information is the channel through which CIDs help busy outside directors provide adequate oversight of management. I test this hypothesis by examining the effect of CIDs in firms where the value of inside information is the expected to be higher. If sharing of inside information is the channel through which CIDs mitigate the negative busyness effect, I expect to see the most pronounced effect in firms where the value of inside information is high. Due to the inherent characteristics, some firms are more difficult to monitor than others are (Coles, Daniel and Naveen, 2008; Linck, Netter and Yang, 2008). Moreover, organizational or operational complexity can make it difficult for outsiders to comprehend information about the firm. Such firms with high monitoring cost or high complexity are particularly challenging for overstretched busy outside directors to monitor. Therefore, the role of inside directors becomes crucial for the success of outside directors in high monitoring cost or highly complex firms (Raheja, 2005; Coles, Daniel and Naveen, 2008). Compared to low monitoring cost firms (low complexity firms), the impact of CIDs in mitigating the

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negative effect of outside directors' busyness on firm performance should be more pronounced in high monitoring cost firms (high complexity firms). To test this hypothesis, I examine the effect of the presence of CIDs in firms with a Busy Board in high and low monitoring cost environments. Similarly, I also examine the effect of the presence of CIDs in firms with a Busy Board in high and low complexity levels. Consistent with my hypothesis, I find that the mitigating effect of CIDs is more pronounced in firms that operate in a higher monitoring cost environment and that are organizationally or operationally complex.

The Impact of the lack of adequate monitoring by Busy Boards should be most evident in decision areas where the boards have direct oversight or approval rights. Accordingly, I expect to see a more direct impact of CIDs on director busyness in several key action areas. Determining the cash holding level and ensuring accuracy of financial statements are some of the important decision areas for the board of directors (Jensen, 1986; Masulis and Mobbs, 2011). Large cash holding without adequate oversight may lead the management to misuse the free cash flows for perks and empire building (Jensen and Meckling, 1976; Stulz, 1990). On the other hand, larger cash buildup minimizes missed investment opportunities and underinvestment (Myers and Majluf, 1984; Stulz, 1990). Extant literature provides evidence that stronger corporate governance is associated with higher cash holdings and vice versa (Dittmar, Mahrt-Smith and Servaes, 2003; Pinkowitz, Stulz and Williamson, 2004). To the extent CIDs improve monitoring by the board, I expect to see a higher level of cash holding in the presence of a CID. I

examine whether Busy Boards maintain lower cash levels to cover monitoring deficiencies and whether the presence of CIDs on Busy Boards alters the cash holding levels. I find evidence supporting my hypothesis that, compared to Busy Boards without a CID, cash holdings are higher in Busy Boards with a CID. Since the market value of cash holdings better captures the magnitude of agency conflict, I also examine the impact of CIDs on Busy Boards with regards to the market value of cash as part of my robustness tests and find similar results.

Ensuring the accuracy of financial statements is another key area of responsibility for the board of directors. Due to time and attention constraints, Busy Boards may lack an understanding of firm's performance to assess the accuracy of the financial statements. Consistent with this view, Rowe and Shivadasan (2014) find that directors with multiple directorships are associated with higher levels of earnings management at their companies. However, since misreported earnings leads to a loss of reputation capital by directors and a subsequent loss of outside directorships (Srinivasan, 2005), certified inside directors (CID) will have greater incentives to ensure the accuracy of financial statements. I examine whether Busy Boards are more likely to experience earnings restatements and whether CID representation on Busy Boards reduces the likelihood of earnings restatements. I find evidence supporting my hypothesis that, compared to Busy Boards without a CID, the likelihood of misreported earnings is lower in Busy Boards with a CID.

Endogeneity is a common concern for all most studies in corporate governance (Hermalin and Weisbach, 2003). Accordingly, there is a concern for potential endogeneity in my study as well. I first discuss the potential endogeneity issues in the context of my study and then utilize a wide variety of approaches to address potential endogeneity issues. I have used firm, industry and year fixed effect in our main regression specification. Firm and industry fixed effects control for firm and industry level time-invariant omitted variable biases (i.e., unobservable heterogeneity). Year fixed effects control for any inter-temporal changes in the economic environment that might affect both board structure and firm performance. In addition to a fixed effect regression framework, I have attempted to address endogeneity using lagged governance variables, two-stage least squares with instruments and GMM estimation. The use of lagged governance variables in regression of firm performance addresses reverse causality concerns. Two-stage least squares methodology addresses omitted variable bias and simultaneity concerns. Finally, GMM estimation addresses omitted variable bias, simultaneity concerns as well dynamic endogeneity concerns. Overall, I find that the results are similar after my best attempts to control for endogeneity. I recognize that any single econometric approach is not robust to all endogeneity concerns. Therefore, following extant literature, I have employed a wide range of econometric techniques to address endogeneity. Even with my multiple attempts to address endogeneity, I cannot entirely resolve all endogeneity concerns. However, I at least addressed the most obvious ones.

My findings are also robust to several alternate measures of directors' busyness. I constructed alternate busyness measures based on relative prestige of the directorship (Masulis and Mobbs, 2014) and based on the average director time requirement for directorships.[5] I have also tested and verified robustness of my results using alternate definitions of Busy Boards based on different thresholds of the fraction of busy directors on the board. To check whether the presence of a Non-CEO insider on the board mitigates the negative busyness effect, I re-estimated the regressions using an indicator for Non-CIDs (i.e. insider directors who are neither a certified inside director nor a CEO of the firm). I find that only the presence of a certified inside director mitigates the negative busyness effect. The mitigating impact of certified inside directors holds for both the pre-SOX and post-SOX period.

The existing literature focuses on the characteristics and effects of either outside directors or inside directors. Fich and Shivdasani (2006), Ferris, Jagannathan and Pritchard (2003), Field, Lowry and Mkrtchyan (2013), and Falato, Kadyrzhanova and Lel (2014) are some examples of studies that examine the effects of director busyness on firm performance. On the other hand, Raheja (2005), Adams and Ferreira (2007), Harris and Raviv (2008), and Masulis and Mobbs (2011) are in the strand of literature that present evidence examining the role of inside directors. This paper contributes to the literature by focusing on the tandem role of outside and inside directors. I provide evidence that support the view that the cooperative role of inside and outside directors

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[5] Based on the data from National Association of Corporate Directors (NACD) Public Company Governance Survey.

alters the opposite isolated effects of any particular group of directors. My findings provide insight about how firms may be able to benefit from the expertise and networks of busy directors by facilitating interaction between inside and outside directors.

The remainder of this dissertation is organized as follows. Chapter 2 reviews the related literature and develops the hypotheses. Chapter 3 discusses the data and research methodology, and presents the descriptive statistics. Chapter 4 presents the empirical tests and findings. Chapter 5 addresses endogeneity concerns and presents robustness tests. I conclude in Chapter 6.

CHAPTER TWO
RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

In this chapter, I provide an overview of the literature related to directors' busyness and the role of inside directors, place my study in the context of the related literature and develop key hypotheses

2.1 Directors' Busyness

The effect of directors' busyness on a firm's performance is the subject of considerable debate. Outside directors are assigned the responsibility of monitoring the actions and performance of management as well as providing advice to management. Therefore, outside directors, rather than inside or gray directors, have duly become the center of attention in the literature related to directors' busyness. The literature provides mixed evidence on the effect of busy outside directors on the performance outcomes of a firm. Some research argues that too many directorships may lower the effectiveness of outside directors as corporate monitors and advisors. However, other studies have yielded results that contradict this negative busyness effect.

Directors' busyness is commonly measured in terms of the number of directorships held by individual directors; and therefore, the holding of multiple directorships is used as the basis of the definition of directors' busyness in the literature. The existing literature

provides evidence that holding multiple directorships certifies director quality. Fama and Jensen (1983) argue that reputational concerns in the external directorship market motivate directors to demonstrate expertise in decision control by diligently monitoring management. Since the value of human capital in the external directorship market is directly related to a director's decision-control expertise, directors with good reputations will be awarded with additional directorships.

In support of this certification view of multiple directorships, some researchers argue that directors at firms that experience positive outcomes are awarded board seats in the future. Brickley, Linck and Coles (1999) show that retired CEOs who demonstrated better performance during their CEO tenure have a higher likelihood of getting more directorships. Coles and Hoi (2003) find that directors who support or enforce stricter corporate governance are awarded with a higher number of directorships in the following years. Bugeja, Rosa and Lee (2009) find that directors who were involved with successful takeovers are more likely to serve on additional outside boards going forward. Ferris, Jagannathan and Pritchard (2003) show that better performance at firms where a director sits has a positive influence on the number of board seats the director holds in future. They also find a positive announcement effect with the appointment of a busy director. On the other hand, directors at firms that experience negative outcomes lose board seats in the future. Fich and Shivdasani (2007) find that directors who were involved with firms that were subject to financial fraud lawsuits experienced a significant decline in the number of board seats they held. Gilson (1990) shows that the directors at firms that

experience financial distress will hold fewer board seats in the future. Similarly, Shivdasani (1993) and Harford (2003) provide evidence that directors who were involved with firms that became targets of hostile takeover attempts hold fewer board seats in the future. Del Guercio and Woidtke (2016) find that directors who cater to self-serving requests from special interest activists are punished in the director labor market with a loss in directorships. In sum, there is evidence in the literature consistent with the certification view that holding multiple directorships is a reflection of director quality.

Holding multiple directorships can facilitate the broadening of a director's social and business connections. Cashman, Gillan and Whitby (2010) find an association between a director's connectedness with other boards and the number of directorships held by the director. Well-connected directors can be valuable resources for the firm, as they have better access to information about other firms and the condition of the market as a whole. Coles, Daniel and Naveen (2012) suggest that the external connections of outside directors are a measure of those directors' advising quality, and they find that the value of complex firms is more sensitive to the connectedness of the firm's outside directors. They also suggest that the connectedness of a director can potentially add value to the firm through both information channels (i.e., better access to information about competitors, customer and suppliers) and non-information channels (i.e., exerting influence to obtain resources at lower cost). Larcker, So and Wang (2013) find that boards that are more centrally located within the network of corporate directors earn higher excess returns.

Better directors are more sought after and serve on a greater number of boards. However, taking on multiple directorships may also lead to "over-boarding"- the notion that directors holding too many directorships lack time to adequately monitor management. A strand of the literature supports the view that directors over-commit themselves by taking on multiple board seats and this results in negative consequences for the firm. Core, Holdhaisen and Larker (1999) find that when directors are busy, the CEO is able to extract additional compensation from the firm. They interpret this finding as a sign of weak governance, in the sense that busy directors may not effectively monitor management. Consistent with the busyness-induced lack of efficacy view, Beasley (1996) reports that firms where outside directors hold a higher average number of directorships are more likely to commit accounting fraud. Shivdasani and Yermack (1999) find that CEOs tend to select directors who are less likely to monitor and directors who hold multiple board seats. Fich and Shivdasani (2006) find that firms with a majority of busy outside directors experience worse performance. They also show that firms with Busy Boards are less likely to fire a CEO after poor performance, and announcements of the departure of a busy director at such firms are greeted with positive announcement returns. Cashman, Gillan and Jun (2012) also find a negative association between board busyness and firm performance. Using a natural experiment with the increase in workload due to death of the CEO or other directors, Falato, Kadyrzhanova and Lel (2014) provide evidence that directors' busyness is detrimental to board monitoring quality.

However, there is another strand of the literature that provides evidence against the negative busyness effect. Ferris, Jagannathan and Pritchard (2003) did not find evidence supporting the view that the presence of outside directors holding multiple board seats harms firm performance. Neither did they find any evidence that outside directors with multiple directorships are associated with greater likelihood of fraud litigation. Field, Lowry and Mkrtchyan (2013) find that busy directors contribute positively to new IPO firms, and these positive effects extend to all except the most established firms. They interpret the results as evidence that busy directors are beneficial for firms where the need for advising is higher. While busy directors may lack efficacy in monitoring, their experience and broader networks make them better advisors.

Despite the debate over the effect of directors' busyness on firm performance, the view that busy directors are ineffective tends to get more support in practice. Consistent with the perceived disadvantages of having busy directors on a board, several director and investor organizations have adopted resolutions recommending limits on the number of directorships held by directors of publicly traded companies. Resolutions adopted by the National Association of Corporate Directors in 1996, by the Council for Institutional Investors in 1999, and by the Institutional Shareholder Services in 2009 call for various limitations on holding multiple directorships. Consistent with these recommendations, as reported in the 2012 Spencer Stuart Board Index Survey, 74% of S&P 500 companies have placed limitations on the number of other corporate directorships board members may hold. In 2007, only 55% of S&P 500 companies had such limitations. These

limitations are intended to ensure sufficient time and commitment from board members for effective board service, and thus support the negative busyness view.

2.2 Role of Inside Directors

There are contrasting views on the roles played by inside directors. Empirical literature on corporate finance provides evidence that influential CEOs select inside directors to maximize their own welfare and entrenchment. In addition to dependence on the CEO for selection to the board, Helmich and Brown (1972), Helmich (1974) and Fee and Hadlock (2004) report that inside directors depend on the CEO for their continued employment, compensation and private benefits derived from the firm. Thus, due to their own career concerns, inside directors do not take positions against an entrenched CEO, which results in weaker or ineffective monitoring and advising roles on the part of inside directors.

In contrast, some researchers argue that inside directors enhance board effectiveness with their firm-specific knowledge and expertise. The implicit assumption in this view is that inside directors are selected based on optimality considerations rather than CEO entrenchment. Supporting this view, Fama and Jensen (1983) suggest that inside directors enhance the effectiveness of the board by improving the quality of decision-making. They argue that performance as a manager in their own firm affects directors' value in the directorship labor market. Therefore, inside directors have an

incentive to focus on their own firm's performance in order to enhance their human capital in the director labor market. Similarly, theoretical studies by Raheja (2005), Adams and Ferreira (2007) and Harris and Raviv (2008) show that inside directors play an effective role in enhancing the advisory and monitoring functions of the board.

Despite the theoretical studies explaining the role of inside directors, there is little empirical evidence on the effect of inside directors on the firm. The major empirical evidence on the role of inside directors comes from Masulis and Mobbs (2011). They argue that all inside directors are not the same, and that the labor market for external directorships provides a way to distinguish among the inside directors. Non-CEO inside directors with external directorships have reputational incentives to focus on their own firm's performance, and this enhanced reputation also makes them less dependent on the CEO for their career prospects. Masulis and Mobbs (2011) named non-CEO inside directors with external directorships as externally certified inside directors (CIDs). They find that the presence of a CID on the board is associated with improved board decision-making and better firm performance. Supporting the view that outside directorships alter the motivation of the inside directors, Mace (1986) reports that firm executives take outside directorships to signal their prestige and recognition in the labor market. Perry and Peyer (2005) suggest that outside directorships can enhance the reputation and prestige of an executive. They find that the outside directorships of an executive enhance the value of the sender firm (i.e., the firm where the executive is employed) when the sender firm has fewer agency problem concerns. Kaplan and Reishus (1990) suggest

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that outside directorship enhances the visibility and connections of an executive and thus broadens future opportunities. They also find that an executive's value in the director labor market is positively associated with own-firm performance.

2.3 Interaction between Inside and Outside Directors

An established view in the management literature is that inside and outside directors serve different but complementary roles on the board. Inside directors and outside directors offer different skill sets and outlooks on decision-making. It is important to consider how the role of inside directors can facilitate the efficiency of the role played by outside directors. Access to firm-specific information is essential for effective monitoring. Hermalin and Weisbach (1998) argue that the information environment of a firm affects the outside director's effectiveness in monitoring and advising. Jensen (1993) argues that a board of directors is ineffective because the culture of board operation discourages conflict, and also because the CEO determines the agenda and information given to the board. Since the main challenge for busy outside directors is that they are over-stretched, and it is difficult for them to invest sufficient time to gather the information required to perform a meaningful role, inside directors can play a complementary role by (a) reducing the time and commitment required for collecting information by outside directors and (b) assisting outside directors in comprehending firm-specific information. Fama and Jensen (1983) argue that a board must have the ability to use internal information, and that the presence of several insiders on the board facilitates the

information flow. Baysinger and Butler (1985) report that inside directors serve as facilitators or interpreters of information. Hill and Snell (1988) explain the role of inside directors as that of integrators of information on internal functions. Raheja (2005) and Harris and Raviv (2008) argue that the greater reputation of inside directors resulting from holding external directorships creates greater external job opportunities and reduces dependence on private benefits from their current employment, which increases the willingness of inside directors to share proprietary firm-specific information with outside directors. Thus, by providing easy access to information and interpreting firm-specific information, inside directors can save an already over-stretched busy outside director the time and effort needed to perform effective board service.

The present study can be placed in the strand of literature that focuses on the interaction between inside and outside directors. The study examines the interaction between inside and outside directors, and how that interaction alters the effects of these two groups of directors on firm performance. In addition, this study sheds light on the channel of interaction between inside and outside directors and the environmental factors that impact their effectiveness. Finally, evidence is provided that a cooperative tandem role of inside and outside directors helps mitigate the negative effects of director busyness on firm performance.

2.4 Endogeneity in Corporate Governance Research

Endogeneity is a major concern for empirical research on corporate governance. Hermalin and Weisbach (2003) summarized the endogenous nature of corporate governance with a system of equations:

(1) $A_{t+s} = \phi C_t + \varepsilon_t$

(2) $P_{t+s} = \beta A_t + \eta_t$

(3) $C_{t+s} = \mu P_t + \xi_t$

Where,

A = Action of the Board (i.e., dismissal of the CEO)

P = Firm Performance (i.e., return on assets)

C = Board Structure or Board Characteristics (i.e., percentage of busy directors)

Time is denoted by t (where s≥0). Φ, β and μ are equation parameters to be estimated. Residual errors for respective equations are denoted by ε, η, and ξ. Equation (1) shows that board characteristics determine the actions of the board. Equation (2) denotes that the board's actions, in turn, affect firm performance. Equation (3) reflects that firm performance influences the structure or composition of the board. Hermalin and Weisbach (2003) further observed that most of the empirical studies in corporate

governance focus on directly studying the impact of board structure on firm performance. That is, these studies essentially substitute equation (1) into equation (2):

(4) $P_{t+s} = \beta (\phi C_t + \varepsilon_t) + \eta_t$

The problem with directly estimating equation (4) is that the relationship in equation (3) is not taken into consideration (i.e., reverse causality). Similar to many other studies in corporate governance, this study also focuses on estimating equation (4) to examine the impact of board structure on firm performance. Therefore, it is important that I address the potential endogeneity issues.

Wintoki, Linck and Netter (2012) pointed out that endogeneity problems in empirical corporate governance research that studies the relation between board structure and firm performance can be broadly categorized into the following sources of endogeneity:

A. Unobservable heterogeneity: Unobserved heterogeneity can arise when both board structure and firm performance are jointly determined by an unobserved firm-specific factor.

B. Simultaneity: Simultaneous endogeneity can arise when board structure is simultaneously determined with firm performance for a given period. In other

words, if firms choose a board structure in a given period with a particular level of performance target for that period, then (1) board structure will affect firm performance and at the same time (2) the performance target will also affect the selection of board structure.

C. Dynamic Endogeneity: Dynamic endogeneity can arise when board structure is determined based on past performance. For example, if board structure is determined based on certain firm characteristics, and if these characteristics are related to past performance, then past performance will, in turn impact board structure.

Unobservable heterogeneity or omitted variable bias can potentially be treated with fixed-effect regression. However, the use of fixed-effect regression depends on the strong assumption that the current board structure is independent of past performance. Simultaneous endogeneity can be treated using instrumental variables in a two-stage or three-stage least square regression framework. However, the strength of the empirical design will, to a large extent, will depend on the validity of the instruments. Wintoki, Linck and Netter (2012) show that a generalized method of moments (GMM) estimator can be used to address dynamic endogeneity issues. They find that GMM estimators can be used as a single solution to address unobserved heterogeneity, simultaneity and dynamic endogeneity.

In the context of the impact of busyness on firm performance, extant literature discusses different possible sources of endogeneity and attempts to address the endogeneity with mainly econometric methodologies. Directors' busyness and firm performance may be related to some omitted firm-specific variable such as company history, culture and product mix. Therefore, the regression of firm performance on busyness measures may result in biased estimates. Fich and Shivdasani (2006) address potential omitted variable bias by using fixed-effect regression.

Directors' busyness may also be related to past performance. For example, if poorly performing firms appoint well-connected and expert busy directors to the board as turnaround specialists, then we may see an association between poor performance and directors' busyness. Fich and Shivdasani (2006) and Cashman, Gillan, and Jun (2012) use lagged values of busyness measures in their regression as robustness tests to account for this alternate explanation of the association between directors' busyness and lower firm performance. Field, Lowry and Mkrtchyan (2013) find a positive relation between directors' busyness and firm performance for IPO firms. They investigate the possible endogeneity that highly reputed, busy directors may tend to join well performing, high-quality firms (i.e., rather than busy directors causing higher firm performance). They use instrumental variables in a two-stage regression framework to address endogeneity.

Masulis, Wang and Xie (2012) suggest that a potential source of endogeneity in studying the association between busy directors or foreign directors and firm performance

is that busy directors or foreign directors may not be randomly distributed among firms. Rather, the presence of these directors in a firm may be determined by factors that affect the firm's demand for such directors and the willingness of such directors to join the firm. For example, entrenched CEOs may prefer extracting greater private benefits that affect firm performance, and such CEOs may also prefer to hire busy directors for their inadequate monitoring ability. To address this possible source of endogeneity, Masulis, Wang and Xie (2012) also use instrumental variables in a two-stage regression.

Addressing endogeneity via a natural experiment in corporate governance studies is generally difficult. However, most recently, Falato, Kadyrzhanova and Lel (2014) utilize a natural experiment to examine the impact of directors' busyness. They use additional workload due to death of a CEO or a director in the firm as an exogenous shock to the director's work-loads. Also, but not in the context of studying impact of directors' busyness on performance, several studies use a difference-in-difference (DID) approach to address endogeneity concerns. A difference-in-difference approach identifies casual effects in panel data settings by studying the difference between a treatment group and a non-treatment group based on sharp changes in the economic environment, government policy or institutional environment. Using SOX as a regulatory shock, Coles, Daniel and Naveen (2014) use a difference-in-difference approach to address endogeneity relating to the effect of a co-opted board (i.e. board comprised of directors appointed after the CEO assumed office).

Except for omitted variable bias and selection bias, other sources of endogeneity are of less concern for empirically studying the impact of certified inside directors (CID) on firm performance. Masulis and Mobbs (2011) point out that CIDs are inside directors who hold directorships in unaffiliated firms. The directorship in unaffiliated firms is a market-determined decision. It is highly unlikely that a firm can decide when one of its inside directors will receive directorships in an unaffiliated firm and thus will become a CID. Similarly, it is unlikely that a firm would appoint one of its executives to the board as an inside director based on the executive's possibility of receiving outside directorships at an unaffiliated firm in future. However, Masulis and Mobbs (2011) note that private information about an executive's internal reputation can be revealed through the executive's appointment as an inside director on the board. Selection bias could result if such private information has firm performance implications. Accordingly, Masulis and Mobbs (2011) utilize the Heckman selection bias correction procedure in their regression analysis.

In the robustness test section of this study, I utilize (a) lagged values of governance measure, (b) two-stage regression with instrumental variables, and (c) GMM estimation with past performance as instruments to re-estimate my regressions to address possible endogeneity concerns.

2.5 Hypothesis Development

My first hypothesis relates to the impact of certified inside directors (CIDs) in mitigating the negative effect of outside directors' busyness. The main challenge for outside directors serving on multiple boards is that they are too over-stretched to play an effective role as monitors. Effective monitoring requires firm-specific inside information. Hermalin and Weisbach (1998) argue that the effectiveness of outside directors in monitoring and advising depends on the information environment of the firm. Similarly, Adams and Ferreira (2007) argue that the effectiveness of a board improves as the CEO provides it with better information. Raheja (2005) highlights the importance of firm-specific knowledge from influential inside directors in enhancing a board's monitoring and advisory effectiveness. The author argues that both inside and outside directors realize reputational benefits from better firm performance. Therefore, high-quality inside directors have incentives to reveal information to the board to improve board decision-making, and, eventually, firm performance. Therefore, with valuable firm-specific knowledge and less reliance on their own CEO for career advancement, certified inside directors (CIDs) are a valuable source of inside information for outside directors. The presence of certified inside directors (CIDs) lessens the effort required by outside directors to acquire information, and thus can enable busy outside directors to provide adequate oversight. The combination of the ease of information access for outside directors and the certified inside directors' own reputational focus on firm performance can enable a firm with a Busy Board (i.e., where a majority of the outside directors are busy) to achieve improved

operating performance and higher valuation. Therefore, I propose the following key hypothesis:

Hypothesis 1: The presence of certified inside directors helps busy outside directors provide adequate monitoring and thus mitigate the negative effect of busy outside directors. Therefore, in the presence of certified inside directors, firms with busy outside directors have better firm performance compared to firms with busy outside directors but without a certified inside director.

I suggest that providing access to information to outside directors is the channel though which certified inside directors mitigate the negative busyness effect. The second and third hypotheses relate to this information channel narrative.

The effectiveness of outside directors depends on the information environment of the firm. The easier it is to access and comprehend firm-specific inside information, the easier is the task of outside directors to provide adequate oversight. Duchin, Matsusaka and Ozbas (2010) argue that outside directors are most effective when the cost of acquiring information about the firm is low. If outside directors are overstretched, they may find it even more difficult to invest adequate time and resources on information acquisition on the firm. Prior literature supports the view that monitoring cost is positively associated with investment opportunities. Coles, Daniel and Naveem (2008) and Linck, Netter and Yang (2008) argue that firms with more investment opportunities have higher

monitoring cost and, therefore, such firms are difficult for outside directors to effectively monitor. Consistent with this view, Masulis and Mobbs (2011) find that certified inside directors are more valuable in firms with higher R&D intensity, which serves as a proxy for investment opportunities. As certified inside directors (i.e., inside directors with outside directorships) have reputational incentives to enhance firm performance, they may work as a possible channel for outside directors to acquire firm-specific information. By sharing firm-specific knowledge and inside information, certified inside directors can make it possible for busy directors to provide effective monitoring. Inside directors are more valuable in firms with higher monitoring cost; however, it can be more challenging for busy directors to perform their monitoring tasks in such firms. Therefore, the beneficial effect of the co-existence of Busy Boards and certified inside directors should be more pronounced in firms where the cost of external monitoring is high. Based on the above discussion, I hypothesize the following:

Hypothesis 2: The mitigating effect of the presence of certified inside directors is more pronounced in high monitoring cost environments. Therefore, the positive impact of certified inside directors on Busy Boards is higher in firms that operate in high monitoring cost environments compared to those firms that operate in low monitoring cost environments.

Similarly, the importance of insider information is critical for operationally and organizationally complex firms. Rajeha (2005) argues that the contribution of inside

directors is significant in complex firms because complexity of operations makes it difficult for outside directors to provide adequate oversight. Due to the cognitive resource limitation arising from over-boarding, comprehension of firm-specific information becomes difficult for busy directors. When the firm's nature or scope of operation is inherently complex, I expect the negative busyness effect of Busy Boards to become more pronounced. As the role of insider directors becomes more critical in complex firms, the mitigating effect of CIDs on busyness should be more evident in high complexity firms than in low complexity firms.   Hence, I hypothesize that

Hypothesis 3: The mitigating effect of the presence of certified inside directors (CIDs) on director busyness is more pronounced in firms with a high level of complexity compared to that in firms with a low level of complexity.

The impact of the lack of monitoring by busy outside directors should be most evident in the areas where the board of directors has direct oversight. My third and fourth hypotheses relate to the determination of the level of cash holdings and the accuracy of financial statements, two of the areas over which the board has direct responsibility.

In the absence of proper monitoring, higher cash reserves may allow managers to pursue unnecessary investments or perks (Jensen and Meckling, 1976). Boards that cannot effectively monitor management can set limits on the firm's cash holdings to prevent use of cash for private benefits. On the other hand, boards that exercise greater

oversight and have better knowledge of the firm's operations can closely monitor to limit the misuse of funds. Such firms can allow a larger buildup of cash under management's control to allow for rapid investment as profitable opportunities unexpectedly arise (Myers and Majluf, 1984). Busy outside directors are overstretched. Due to their inherent time and attention constraints in monitoring, Busy Boards may set limits on a firm's cash holdings to constrain management's ability to use cash for private benefit. I find support for this view in Harford, Mansi, and Maxwell (2008), who provide evidence that weaker governance is associated with a lower level of cash holdings. However, CIDs may work as a counteracting force in this aspect. Masulis and Mobbs (2011) find that firms with a CID allow larger cash reserves under management's control. By providing inside knowledge on firm operations, CIDs can help to improve the monitoring abilities of a Busy Board. Thus, I expect that Busy Boards with a CID will hold larger cash reserves compared to Busy Boards without a CID.

To the extent that CIDs improve board monitoring by providing inside knowledge on firm operations, I expect CIDs to be associated with greater cash reserves in Busy Boards compared to the Busy Boards without a CID. Therefore, I hypothesize the following:

Hypothesis 4: Due to the lack of adequate oversight by busy directors, Busy Boards are associated with lower cash holdings. CIDs help Busy Boards to enhance

monitoring effectiveness. Thus, Busy Boards with a CID allow for larger cash holdings compared to Busy Boards without a CID.

Busyness can adversely affect a board's ability to monitor management's efforts to ensure accuracy of financial statements. An informed director with good understanding of firm performance and operations is better equipped to detect inflated earnings. However, a busy director may lack the oversight for detecting efforts to misreport earnings. Field, Lowry and Mkrtchyan (2013) examine the effect of director busyness on recent IPO firms and found that IPO firms with Busy Boards are not more likely to restate earnings within three years of going public. However, for more mature firms, where the board's monitoring role is more critical than its advising role, director busyness may have an adverse effect on the likelihood of earnings misreporting. I find support for this view in Falato, Kadyrzhanova and Lel (2014), who find that attention shocks induced by the additional workload of outside directors are associated with increased likelihood of earnings restatement. Beasley (1996) reports that a higher average number of directorships held by outside directors is positively associated with a higher probability of committing accounting fraud. Masulis and Mobbs (2011) find that CIDs are associated with a lower likelihood of earnings restatements. They suggest that, due to reputational concerns, CIDs have strong incentives to help outside directors in assessing the reliability of financial statements. Therefore, I hypothesize the following:

Hypothesis 5: Busy directors lack clear understanding of firm performance, and thus Busy Boards are associated with higher likelihood of earnings restatements. CIDs help busy directors to properly assess the accuracy of financial statements. Therefore, Busy Boards with a CID are associated with a lower likelihood of earnings restatement compared to Busy Boards without a CID.

CHAPTER THREE
DATA AND DESCRIPTIVE STATISTICS

3.1 Data Sources

The director-level data for my study comes from RiskMetrics and BoardEx. RiskMetrics (formerly, IRRC) covers director-level data for S&P 1500 firms starting in 1996. This data has been extensively used in the literature for studying the impact of director busyness. I supplement the RiskMetrics data with director-level data from BoardEx, which provides information on the board characteristics and the directors' networks. BoardEx coverage includes a wide range of company boards worldwide, both public and private. For the US, the dataset provides director-level data on 8250 US company boards starting from 1997. By combining RiskMetrics and BoardEx director datasets, I create a more extensive dataset of director-level information than those used in any of the previous studies on directors' busyness.

One of the major issues with the RiskMetrics dataset is that it lacks a unique firm identifier or director identifier across all years in the dataset. RiskMetrics changed its data collection methodology in 2007. The primary firm identifier for firm observations prior to 2007 is a 6-digit header CUSIP, which identifies firms with the most recent CUSIP as of 2006. However, firm observations on or after 2007 are identified with a 9-digit historical CUSIP, which identifies firms with an actual CUSIP used for each firm-year observation.

Similarly, completely separate director identifiers were used 1996-2006 (i.e., LEGACY_DIRECTOR_ID) and 2007-current (i.e., DIRECTOR_DETAIL_ID) time periods. Moreover, there are significant coding errors present in the director identifiers, which result in the same director being identified with multiple identifiers. To resolve the firm identifier and director identifier problems, I use the RiskMetrics data-adjustment procedures as described in Coles, Daniel and Naveen (2014).[6] In addition, I follow the sample construction procedure of Cashman, Gillan and Jun (2012)[7] to resolve inconsistencies in director identifier, gender, director classification, and director tenure. Even after making the adjustments described above, a significant number of coding errors remained in the director identifiers. For example, Apple's former CEO Steven Jobs has LEGACY_DIRECTOR_ID 44467 and DIRECTOR_DETAIL_ID 7177 for different years from 1998 to 2010 for his directorships in Apple, Gap and Pixar. However, for his directorships in Walt Disney Company from 2008 to 2010, Mr. Jobs has no LEGACY_DIRECTOR_ID and DIRECTOR_DETAIL_ID 87560. By cross-referencing LEGACY_DIRECTOR_ID and DIRECTOR_DETAIL_ID, it is possible to identify Mr. Jobs' directorships for Apple, Gap and Pixar. But this cross-referencing procedure will identify him as a different unique director for his directorships in Walt Disney. There are many such examples where the combination of LEGACY_DIRECTOR_ID and DIRECTOR_DETAIL_ID fails to uniquely identify a director for all his/her directorships during the sample period. I conduct an extensive manual verification process to uniquely

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[6] I am grateful to Jeffrey Coles, Naveen Daniel and Lalitha Naveen for generously sharing their cleaned RiskMetrics unique director and firm identifier data with matching CRSP and COMPUSTAT firm-year identifiers.
[7] I would like to express my gratitude to George Cashman, Stuart Gillan and Chulhee Jun for sharing their SAS program codes that they used to resolve data inconsistencies in RiskMetrics' director dataset.

identify the directors in the datasets. For the verification process, I check director profiles for all directors who have similar name and age, but different director id. Without the manual verification process of the RiskMetrics director identifiers, calculation of the directors' busyness measures and identification of certified inside directors (CIDs) will essentially be erroneous.

Similarly, for BoardEx data, I conduct an extensive manual verification process to ensure all directors are uniquely identified. Firm identification in BoardEx is primarily based on CIK Code, and it is consistent across the years. A large number of director observations contain director names with professional titles (i.e., Dr., Professor, Major General etc.), which is inconsistent with the naming convention used in RiskMetrics. RiskMetrics and BoardEx do not have any common director identifiers. I make the director name and age observations in BoardEx consistent with the RiskMetrics observations format to facilitate creation of unique director identifiers. I merge RiskMetrics and BoardEx director observations based on similarity of name and age and then conduct a manual verification process to create my own unique director identifiers for the combined dataset.

I collect accounting data from COMPUSTAT and stock market data from CRSP. I supplement CEO identifiers in RiskMetrics and BoardEx with CEO identification data from Execucomp. Earnings restatement data came from the General Accounting Office (GAO) Financial Restatement Database and I supplement it with data from Audit Analytics. Data on the average director time commitment per year was provided by the National

Association of Corporate Directors (NACD).[8] I collect data on the Fama-French 48-Industry classification from the website of Dr. Kenneth French.[9] To construct an instrumental variable based on the number of public firms located within 100 miles of a company's headquarters, I use the Zip code distance database of the National Bureau of Economic Research (NBER).[10]

3.2 Sample Construction

The sample period for my study is 1997 to 2013. After resolving data inconsistencies and coding errors in the RiskMetrics and BoardEx datasets, I merge director-level observations from these two data sources. For the firm-years that are common to both RiskMetrics and BoardEx, I keep the observations from RiskMetrics. From the merged director data, I dropped observations for the firm-years that are not covered both in COMPUSTAT and CRSP. I merge the combined RiskMetrics-BoardEx director data with COMPUSTAT and CRSP data using the COMPUSTAT-CRSP Merge (CCM) table provided by Wharton Research Data Services (WRDS). Following Masulis and Mobbs (2011), I drop the firm-year observations with a co-CEO and the firm-year observation for which a CEO cannot be identified. I exclude financial and utility firms from the sample (SIC Code 4900-4999 and 6000-6999). After the above-described data

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screening procedure, I have 357,231 director-level observations form 43,705 firm-years

and 5,747 unique firms in my final sample covering the period from 1997 to 2013.

3.3 Busyness Measures

The RiskMetrics database provides a count of directorships on major public

boards. That is, the number of directorships measured in the RiskMetrics data is based

on the number of directorships on major public boards. BoardEx includes, among others,

a directorship count based on directorship in all public firms. To make the BoardEx

directorship count consistent with that of the RiskMetrics data, I only count directorship in

firms that are covered in both COMPUSTAT and CRSP for BoardEx firms. This roughly

approximates RiskMetrics' measure of directorships in major public firms.

Consistent with the prior literature, I consider a director to be busy if he/she holds

three or more directorships. Cashman, Gillan and Jun (2012) experiment with alternative

board seat thresholds for busyness definition (i.e., classifying directors as busy if they

serve on two or more boards, or if they serve on four or more boards). They find that

alternate board seat thresholds, in general, provide similar results with respect to

association between directors' busyness and firm performance. However, the results are

strongest when directors are classified as busy using three or more board seat thresholds.

I use two busyness measures: (a) Busy Board Indicator and (b) Percentage of Busy Directors. Busy Board Indicator is an indicator variable which equals one when a majority (50% or more) of outside directors are busy, and zero otherwise. Percentage of Busy Directors measures the percentage of outside directors who are busy. These two measures capture the busyness of outside directors as a group.

For robustness tests, I consider several alternate busyness measures. Firstly, I recreate the Busy Board Indicator based on several alternate thresholds. Specifically, I classify a board as busy when (a) 30% or more of the outside directors are busy and (b) 40% or more of the outside directors are busy. Secondly, I create a director-focus measure based on the concept of a firm's relative prestige from Masulis and Mobbs (2014). For each outside director, I construct a measure of directors' focus in a firm based on the fraction of market capitalization of the firm in question in relation to the total market capitalization of the firms where the director holds directorships. Then, the average directors' focus in a firm is calculated based on the average of directors' focus by the outside directors of a firm. The smaller the average directors' focus in a firm, the more distracted or busy are the outside directors of the firm. Thirdly, I calculate an alternate busyness measure by multiplying the number of board seats held by a director with the average director time commitment required for the specific year. Then, the average of this product for all outside directors of the firm provides a busyness measure that takes care of intertemporal changes in director time commitment requirement over time.

3.4 CEO Identification

I follow the CEO identification process as described in Masulis and Mobbs (2011). Both the Risk-Metrics and the BoardEx data include a flag to indicate whether an inside director is the CEO of the firm. Using the CEO flag and the director's primary role description, I identify the CEOs for the firm-years in my sample. In cases where CEO identification was not possible using the above information, and if an inside director was flagged as President or Chairman, or if there was only one inside director on the board, I identify that director as the CEO. I also supplement the CEO identification information from the EXECUCOMP database. If a CEO cannot be identified, or if there are multiple directors marked as the CEO (i.e., co-CEO firms), then those firm-years are also dropped from my sample.

3.5 Certified Inside Director (CID)

The concept of the certified inside director (CID) comes from Masulis and Mobbs (2011). Certified inside directors (CIDs) are defined as the non-CEO inside directors who hold outside directorships. I consider only independent outside directorships. Therefore, if an inside director holds a directorship in an affiliated firm, then that linked or gray directorship is not considered in deciding the classification of an inside director as a CID. This ensures that only market-determined directorships for inside directors are the basis for classification as certified inside director. To indicate the presence of a certified inside

director on a board, I use a CID Board Indicator variable which takes a value of one when at least one CID is present on the board, and zero otherwise.

For robustness tests, I also use a non-CID measure. A director is classified as a non-CID for a firm if the director is a non-CEO inside director and does not hold any directorships in unaffiliated firms as independent director.

3.6 Firm Performance Measures

Assuming a high market-to-book ratio as an indicator for good management and performance, I use Tobin's Q as the main measure of firm performance. I calculate Tobin's Q as the market value of the firm's equity plus the difference between the book value of the firm's assets and equity, divided by the book value of the firm's assets.

I also use return on assets (ROA) as an alternate measure of firm performance. Following Fich (2005), ROA is calculated as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets, divided by the average of the beginning and year-end book value of total assets. This measure captures the operating performance of the firm. Since the ROA measure is based on historical operating performance variables and does not contain any market price variables, it is not influenced by potential investment opportunities.

3.7 Control Variables

I analyze my panel data sample using a regression framework with year, industry and firm fixed effects to examine the empirical association between directors' busyness and firm performance and whether the presence of a certified inside director (CID) on the board mitigates the busyness effect on firm performance.

$$Performance_{i,t} = \beta_0 + \beta_1 Busyness_{i,t} + \beta_2 CEODirectorship_{i,t} + \beta_3 IndustryDirector_{i,t} +$$
$$\beta_4 DirectorOwnership_{i,t} + \beta_5 BoardInterlock_{i,t} + \beta_6 CEOOwnership_{i,t} +$$
$$\beta_7 Boardsize_{i,t} + \beta_8 BoardComposition_{i,t} + \beta_9 ROA_{i,t} + \beta_{10} FirmSize_{i,t} +$$
$$\beta_{11} FirmAge_{i,t} + \beta_{12} GrowthOpportunity_{i,t} + \beta_{13} BusinessSegments_{i,t} +$$
$$Firm\ Fixed\ effects_t + Industry\ Fixed\ effects_t + Year\ Fixed\ effects_t$$

Firm performance measure (Tobin's Q or ROA) is used as dependent variable in my fixed-effect regression framework. Following Fich and Shivdasani (2006), I select a set of board and firm characteristics variables as control variables for my regression analysis. These board and firm characteristics variables control for the factors that are likely to affect firm performance.

The board characteristics-related control variables are (1) directorships by the CEO, (2) ownership by the CEO, (3) ownership by the directors, (4) presence of an industry director, (5) board interlock, (6) board size, and (7) board composition. Directorships by the CEO (*CEODirectorship)* is calculated as the natural log of the

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number of directorships held by the CEO. Ownership by the CEO (*CEOOwnership)* is measured as the percentage of common shares held by the CEO. Similarly, ownership by the directors (*DirectorOwnership)* is measured as the percentage of common shares held by all the directors of the board (excluding the CEO). The presence of an industry director (*IndustryDirector)* is an indicator variable that equals one if there exists at least one outside director on the board who holds at least 50% of his/her directorships in the same Fama-French 48 Industry Class, and zero otherwise. Board interlock (*BoardInterlock)* is an indicator variable that equals one if the firm's CEO sits on the board of any outside director of the firm, and zero otherwise. I measure board size (*Boardsize)* as the natural log of the number of total directors on the board. Board composition (*BoardComposition)* is measured by the percentage of outside directors on the board, and it is calculated as the number of outside directors scaled by the board size.

Firm characteristics-related control variables are (1) return on assets, (2) firm size, (3) firm age, (4) growth opportunities, and (5) the number of business segments. Return on assets (*ROA)* is calculated as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets. This sum is then scaled by the average of beginning and ending of year book value of total assets. For regressions with return on assets as dependent variable, return on sales is used as control variable instead. Firm size (*FirmSize)* is measured as the natural log of net sales. Firm age (*FirmAge)* is calculated as the number of years since a firm was first included in the CRSP database.

Fich and Shivdasani (2006) argue that underinvestment or unexploited investment or growth opportunities may lead to higher values of Tobin's Q. Following their approach, I include controls for growth opportunities (*GrowthOpportunity)* in my regression analysis. I use depreciation-to-sales ratio as the proxy for growth opportunities, and this ratio is calculated as depreciation expense scaled by net sales. Number of business segments (*BusinessSegments)* measures the number of business segments based on COMPUSTAT segments data.

3.8 Monitoring Cost and Firm Complexity

I hypothesize that certified inside directors (CIDs) facilitate outside directors' monitoring ability by sharing firm-specific information, and thereby CIDs help minimize the lack of oversight by overstretched busy outside directors. This attenuating effect of CIDs should be more pronounced in high monitoring cost firms and high complexity firms. I test this hypothesis by creating two indicator variables for the level of external monitoring cost and the level of complexity of the firm.

Following prior literature (Faleye, 2007; Linck, Netter and Yang, 2008), I select stock return volatility, R&D intensity, insider ownership, and the ratio of intangible assets to total assets as proxies for monitoring cost. As these are correlated proxies, I create a factor score from principal component analysis of these variables to construct a single

measure of monitoring cost. I classify a firm as a high (low) monitoring cost firm if the firm's factor score for monitoring cost is in the top (bottom) quartile.

Similarly, I draw from prior literature (Boone, Field, Karpoff and Raheja, 2007; Linck, Netter and Yang, 2008; Coles, Daniel and Naveen, 2008) to select firm size, firm age, leverage and number of business segments as proxies for the operational complexity of the firm. I create a firm complexity measure using a factor score from principal-component factor analysis of these proxies. I classify a firm as a high (low) level of complexity firm if the firm's factor score for complexity is in the top (bottom) quartile.

3.9 Descriptive Statistics

My study focuses on the interaction of outside directors' busyness and the presence of CIDs on the board. In my sample, I have 2,744 firm-year observations that have a Busy Board (i.e., a majority of the outside directors sit on three or more boards). On the other hand, there are 2,620 firm-year observations that have a certified inside director (CID) on the board. Table 1 shows a matrix of Busy Board and CID Board classifications in my sample. 283 firm-year observations from 147 unique firms fall in the intersection of Busy Board and CID Board. A list of these 147 firms is provided in Appendix-A. Over the 17-year sampling period from 1997 to 2013, 6% of the firm-year observations have a Busy Board where a majority of outside directors hold two or more outside directorships (i.e., a total of three directorships including directorship in their own

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firm). 94% of the firm-year observations do not feature a Busy Board. This indicates the general reluctance of firms to recruit busy outside directors.

Table 2 shows the distribution of directors in the sample based on the number of total directorships held. 94% of the directors in the sample sit on two or fewer boards. I classify a director as busy when he or she holds two or more outside directorships (i.e., three or more total directorships). Based on my definition of busy directors, 6% of the directors in my sample are busy. The percentage of directors holding multiple directorships falls as the number of directorships increases. Less than 1% (i.e., 0.65%) of directors in my sample hold five or more directorships. The maximum number of directorship held by a director in the sample is 10.

There is a decreasing trend in the number of busy outside directors in my sample over time. As shown in Table 3, 18.93% of the directors were busy in 1999. However, a sharp declining trend is evident during the post-SOX period. In 2013, only 10.96% of the outside directors were busy.

Table 4 shows the yearly distribution of inside directors and certified inside directors (CIDs) over time. With the increased focus on board independence, the number of inside directors on boards has declined over time. There were 2,650 inside directors in the sample in 1999. This represents 23% of the director population for that year. The percentage of inside directors was more than 20% for every year prior to 2004. Since

then, there is a decreasing trend in the number of inside directors in the sample. In 2013, about 16.91% of the directors in the director population were inside directors. Consistent with this trend, the number of certified inside directors has also decreased over time. 6.26% of the inside directors were CIDs in 1999. This number declined to 3.38% in 2013. However, since 2010, I observe a slight increasing trend over three consecutive years.

Table 5 shows the decreasing trend in the number of Busy Boards and CID Boards in my sample. In practice, companies appear to believe in the negative effects of director busyness. The 2015 Spencer Stuart Board Index survey reports that 77% of S&P 500 firms now place some sort of restriction on holding multiple directorships. Several director and investor organizations have also adopted resolutions recommending limits on multiple directorships. This trend is reflected in my sample as well. In 1999, 9.38% of the firms had a Busy Board. This number decreased significantly over time. In 2013, only 5.67% of the firms in the sample had a Busy Board. A similar trend is evident in the case of CID Boards. The number of inside directors who hold outside directorships has decreased over time. This may be a reflection of the increased time commitment required for a single board directorship, which has increased from 210 hours per year in 2006 to 228 hours per year in 2011 (*The Wall Street Journal*, February 29, 2012). Distribution of Busy Board with a CID is shown in Table 6. There are a total of 283 firm-year observation from 147 unique forms that feature both a Busy Board and a CID Board.

In Table 7, I present descriptive statistics of the key variables of the firms in my sample. On average, 69% of the directors on the boards are outside directors and 13.5% of the outside directors are busy. On average, 6% of the firms have Busy Boards (i.e., where 50% or more of the outside directors are busy).

In Tables 8, 9 and 10, I present descriptive statistics of different sub-groups of firms. In all cases, I examine the difference in means between the sub-groups. Significance levels of the test of means are marked with an asterisk where ***, ** and * indicate 1%, 5% and 10% levels of significance. Panel A and Panel B of Table 8 present the descriptive statistics for the firms with a Busy Board and firms without a Busy Board, respectively. Firms with a Busy Board are larger in size, have better firm performance, bigger board size and a lower percentage of outside directors compared to the firms without a Busy Board. Firms without Busy Boards are more mature compared to firms with Busy Boards. This is consistent with Field, Lowry and Mkrtchyan (2013), who find that need for the monitoring role of outside directors is higher in matured firms, and thus they tend to avoid appointing busy directors. Panel A and Panel B of Table 9 present descriptive statistics of key variables for firms with a CID Board and firms without a CID Board. As defined earlier, a board is classified as a CID Board if at least one of the inside directors holds a directorship in an unaffiliated firm. Firms with a CID on the board have better firm performance, larger size, a bigger board, a lower percentage of outside directors and more busy directors compared to firms without a CID on the board. Firms with a CID on the board are also more mature and more complex, which is consistent

with Coles, Daniel and Naveen (2008) who suggest that need for firm-specific expertise from inside directors is critical in operationally complex firms. I further divide the sample firms into firms that have a Busy Board with at least one CID and firms that have a Busy Board without the presence of any CID. The descriptive statistics for these two groups of firms are presented in Panel A and Panel B of Table 10, respectively. Firms that have a Busy Board and at least one CID on the board are larger in size, more mature, more complex and have better operating margins, return on assets, a bigger board, more busy directors and a lower percentage of outside directors.

CHAPTER FOUR
EMPIRICAL RESULTS

4.1 Effect of Directors' Busyness on Firm Performance

In this section, I examine the effect of directors' busyness on firm performance. There are several major studies that have looked at the same issue from different perspectives using different samples and methodologies. Previous studies mostly used samples comprised of S&P 1500 or equivalent firms for a shorter period of time. However, I use an extensive dataset by combining RiskMetrics and BoardEx director data that covers 43,705 firm-years and 5,747 unique firms for the 1997-2013 time period. By combining RiskMetrics and BoardEx director data, I study the busyness effect on a much larger sample comprised of firms from a broader range of size categories. Since the types of firms covered and the sampling period are much broader than any of the previous studies, it is important that I examine whether the previously documented association between directors' busyness and firm performance holds for my study. Moreover, the focus of my study is to examine whether certified inside directors alter the directors' busyness effect. Therefore, it is essential to document the exact nature of the directors' busyness effect in my sample.

The presence of omitted firm-specific attributes leads to biased estimates in OLS specification. The use of a fixed-effect regression approach is robust with respect to the presence of omitted variables, and thus results in more reliable estimates. Cashman,

Gillan and Jun (2012) find that use of a fixed-effect regression framework consistently provides evidence of a negative relation between directors' busyness and firm performance regardless of the sample of firms examined. Accordingly, I use a fixed-effect regression to examine the directors' busyness effect. Following Fich and Shivdasani (2006), I examine the effect of directors' busyness on firm performance using the following regression framework:

$$Performance_{i,t} = \beta_0 + \beta_1 Busyness_{i,t} + \beta_2 CEODirectorship_{i,t} + \beta_3 IndustryDirector_{i,t} +$$

$$\beta_4 DirectorOwnership_{i,t} + \beta_5 BoardInterlock_{i,t} + \beta_6 CEOOwnership_{i,t} +$$

$$\beta_7 Boardsize_{i,t} + \beta_8 BoardComposition_{i,t} + \beta_9 ROA_{i,t} + \beta_{10} FirmSize_{i,t} +$$

$$\beta_{11} FirmAge_{i,t} + \beta_{12} GrowthOpportunity_{i,t} + \beta_{13} BusinessSegments_{i,t} +$$

$$Firm\ Fixed\ effects_{\ t} + Industry\ Fixed\ effects_{\ t} + Year\ Fixed\ effects_{\ t}$$

Based on the model stated in the above equation, I estimate fixed-effect regression of firm performance and outside directors' busyness. Table 11 presents the output of the regression. I use two different measures of firm performance: Tobin's Q (models 1 and 2) and ROA (models 3 and 4). Tobin's Q is calculated as the market value of the firm's equity plus the difference between the book value of the firm's assets and equity, divided by the book value of the firm's assets. I calculate ROA as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets, divided by the average of the beginning and year-end book value of total assets. Outside directors'

busyness is measured with the Busy Board Indicator and Percentage of Busy Directors variables. Busy Board Indicator is an indicator variable which equals one when a majority (50% or more) of outside directors are busy, and zero otherwise. Percentage of Busy Directors measures the percentage of outside directors who are busy. A director is considered busy if he/she holds three or more directorships. Following Fich and Shivdasani (2006), I control for corporate governance and financial characteristics that are likely to affect firm performance. The control variables related to governance characteristics are directorships by the CEO, ownership by the CEO, ownership by the directors, presence of an industry director, board interlock, board size, and board composition. Control variables related to the firm's financial characteristics are return on assets, firm size, firm age, growth opportunities, and the number of business segments. Definitions of the control variables are described in Section 3.8 and also in Appendix-A. Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level.

Models 1 and 3 show that the coefficient on Busy Board Indicator is negative and statistically significant. Models 2 and 4 show that the coefficient on the percentage of outside directors who are busy directors is also negative and significant. That is, both of my busyness measures show significantly negative effects on firm performance measures in all models. The coefficients on the control variable are in line with the results

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reported in Fich and Shivdasani (2006) and Cashman, Gillan and Jun (2012). Overall, the results suggest that outside directors' busyness negatively affects firm performance.

4.2 Mitigating Effect of a Certified Inside Director (CID)

In this section, I focus on examining how the presence of certified inside directors (CIDs) on the board alters the busyness affect. Certified inside directors (CIDs) have incentives to reveal information to the board to improve board decision-making and improve firm performance (Masulis and Mobbs, 2011). By providing firm-specific information and assistance in comprehending information, CIDs can lessen the time and effort required by outside directors to adequately monitor managerial actions. Therefore, I expect to see a mitigating impact of the CIDs on the outside directors' negative busyness effect.

Following Masulis and Mobbs (2011), I define certified inside directors (CIDs) as non-CEO inside directors who hold directorships in an unaffiliated firm. I measure the presence of a CID with an indicator variable (*CIDBoard)* that takes a value of 1 if at least one CID is present on the board and zero otherwise. I examine the role of CIDs in mitigating the outside directors' negative busyness effect using the interaction of the CID indicator and busyness measures. Firm, industry and year fixed effects are employed for all regression models. The p-values are reported in parentheses and are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level.

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Table 12 reports the results of the fixed-effect regression. CID Board Indicator is a dummy variable which equals one if the firm has at least one CID on the board, and zero otherwise. I interact CID Board Indicator with Busy Board Indicator in Model 1 and Model 3. I interact CID Board Indicator with the percentage of busy outside director measure in Model 2 and Model 4. The dependent variable is Tobin's Q in Model 1 and Model 2 and ROA in Model 3 and Model 4. I am interested in the coefficient of the interaction terms between CID Board Indicator and the busyness measure. The coefficients of the interaction terms are significantly positive in all models. This shows that for firms with a CID on the board, the effect of outside directors' busyness on firm performance is significantly positive. The absence of a negative effect of outside directors' busyness on firm performance indicates a mitigating effect of CIDs. The coefficients of the busyness measure itself represent the effect of outside director busyness for firms without a CID on the board. The coefficients of Busy Board (in Model 1 and Model 3) and percentage of busy outside directors (in Model 2 and Model 4) are significantly negative. That is, for firms without a CID on the board, the busyness of outside directors negatively affects firm performance. The sum of the coefficient of the busyness measure and the coefficient of the interaction term provide the total busyness effect. For all regression models, the total busyness effect in the presence of a CID is positive, and F-statistics for the total effect are significant at a 5% level. For example, the total busyness effect on the percentage of busy outside directors measure on Tobin's Q (Model 2) is 0.034 (i.e., -0.041 + 0.075). The economic impact of the presence of a CID is nontrivial. Average market capitalization in my sample is $4490 million and average Tobin's Q is 2.08. An increase of 0.034 in

Tobin's Q is thus equivalent to $73.39 million increase in market capitalization for an average firm. The F-Statistic for the null hypothesis that the combined effect is zero is 0.17, and the significance level of the test is 4.08%. Overall, the results support Hypothesis 1 by providing evidence that firms with a CID on the board are immune to negative busyness effects, but firms without a CID continue to experience negative busyness effects on performance.

4.3 Channel of Effect: Monitoring Cost and Complexity

The empirical results in the previous section provided evidence that certified inside directors can help mitigate the negative firm performance effects associated with outside director busyness. I hypothesize that the flow of firm-specific information from inside directors to outside directors is the channel of this mitigating effect. In this section, I'll empirically test this information narrative. If flow of information is the channel through which inside certified directors facilitate busy directors, then I should see the strongest mitigating effect in firms where it is particularly difficult for outside directors to acquire firm-specific information. The cost of external monitoring and operational complexity of firms provides a suitable setup for empirically testing my hypothesis.

4.3.1 Monitoring Cost

One of the main challenges for overstretched outside directors is that they cannot invest adequate time and effort on a specific firm to monitor management. If a firm is more

difficult to monitor due to its inherent characteristics, then it becomes even more challenging for busy outside directors to provide adequate oversight. For example, firms with more growth opportunities or technology-intensive operations are more costly for outside directors to effectively monitor (Coles, Daniel and Naveen, 2008; Linck, Netter and Yang, 2008). In these firms, the role of inside directors becomes more important. Raheja (2005) argues that the role of inside executive directors with firm-specific knowledge becomes more important in firms where it is more difficult for outside directors to monitor the firm's projects or operations. Coles, Daniel and Naveen (2008) argue that inside directors are more beneficial in firms with high R&D intensity where the importance of firm-specific knowledge for monitoring is higher. Similarly, Masulis and Mobbs (2011) find that certified inside directors (CIDs) are more valuable for firms with higher growth opportunities.   With greater labor market reputation and incentives, certified inside directors (CIDs) are particularly valuable for busy outside directors as a source of firm-specific information. CIDs can help to enhance busy outside directors' monitoring ability by (a) reducing the time and commitment required for collecting information, and (b) assisting outside directors in comprehending firm-specific information. Therefore, the mitigating effect of the presence of CIDs should be higher in firms with Busy Boards that operate in high monitoring cost environments. To test this hypothesis, I examine the effect of co-existence of CIDs and Busy Boards on performance in firms with high and low levels of monitoring costs.

Stock return volatility, R&D intensity, proportion of inside ownership and the ratio of intangible assets to total assets have been used in the prior literature as proxies for monitoring cost (Faleye, 2007; Linck, Netter and Yang, 2008). To obtain a single measure of monitoring cost, I calculate a factor score from a principal-component analysis using all of these variables. I calculate the factor score for each proxy variable using the first principal component as it is the only one with an eigenvalue greater than one. For each firm-year observation, I compute a factor score, which is a linear combination of the standard normal values of the four proxy variables of monitoring cost. Then, based on the top and bottom quartiles of the factor scores, I create indicator variables for High Monitoring Cost and Low Monitoring Cost. The High (Low) monitoring cost indicator equals one if a firm is in the top (bottom) quartile of monitoring cost factor score, and zero otherwise. Coles, Daniel and Naveen (2008) employ factor analysis to compute factor scores in a similar manner. They comment that using a single complexity factor score instead of multiple proxy variables "increases the power of the regression-based tests by circumventing difficulties arising from multi-collinearity."

To examine whether the strength of influence of certified inside directors (CIDs) on the directors' busyness effect differs between high monitoring cost firms and low monitoring cost firms, I create two more indicator variables: *busycid* and *busynocid*. The indicator variable *busycid* equals one if the firm has both a Busy Board with the presence of a CID, and zero otherwise. The indicator variable *busynocid* equals one if the firm has a Busy Board but no CID is present on the board. These two indicator variables are then

interacted with the High and Low Monitoring Cost firm indicators to examine the mitigating effect of CIDs in different monitoring cost environments. Tobin's Q is the dependent variables for all models.[11] Firm, industry and year fixed effects are employed for all regression models. The p-values are reported in parentheses and are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level.

In Model 1 in Table 13, I use the interaction of High and Low Monitoring cost firm indicators with Busy Board with CID (*busycid*). The coefficient on the Busy-CID and High Monitoring Cost interaction is 0.058, and it is significant at the 1% level. The coefficient of the Busy-CID and Low Monitoring Cost interaction is 0.013, and it is significant at the 5% level. The mitigating impact of certified inside director in a Busy Board is higher in high monitoring cost environments. Using a Wald test, I find that the impact of CID on Busy Board in high monitoring cost firms is significantly higher (at the 1% level) than that of in low monitoring cost firms. These results indicate that even though busy outside directors are less effective in high monitoring cost environments, the presence of CIDs can overcome the busyness effect. This is consistent with Coles, Daniel and Naveen (2008), who find that inside directors are more effective in firms where the need for firm-specific information is higher.

In Model-2, I use the interaction of both High and Low Monitoring Cost firm indicators with both Busy Board with CID (*busycid*) and Busy Board without CID

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[11] Results are similar when Return on assets (ROA) is used as the dependent variable.

(*busynocid*). The coefficients of the Busy-CID and High Monitoring Cost interaction is 0.081 and it is significant at the 1% level. The coefficient of the Busy-CID interaction in Low Monitoring Cost is 0.033 and it is significant at the 5% level. As was the case in Model 1, I continue to find that there is significant difference between these two coefficients. The coefficients of the Busy-NOCID and High Monitoring Cost interaction is -0.147 and it is significant at the 1% level. The coefficients of the Busy-NOCID and Low Monitoring Cost interaction is -0.126, but it is not statistically significant. The results suggest that in the absence of a certified inside director, directors' busyness is particularly harmful for firm performance in high monitoring cost environments. Low monitoring cost (i.e., lower information asymmetry) works to the advantage of busy directors. The results provide support for Hypothesis 2 that the positive impact of certified inside directors on Busy Boards is higher in firms that operate in a high monitoring cost environment compared to those firms that operate in a low monitoring cost environment. This also suggests that the channel for the mitigating impact of CIDs is information flow to the outside directors. Therefore, the presence of a CID has a different impact on directors' busyness depending on the information environment in a firm.

4.3.2 Firm Complexity

A firm's level of complexity also presents an avenue to identify the channel of the attenuating effect of CIDs on director busyness. Acquiring firm-specific expertise to comprehend current business status and future business prospects in complex firms is relatively difficult for outside directors. As a result, the communication between the CEO

and the outsider directors is more costly in complex firms (Balsam, Puthenpurackal, and Upadhyay, 2016). Complexity of operation signifies the need for inside information in effective monitoring; thus outside directors face challenges in providing adequate oversight. Monitoring a complex firm becomes even more difficult for busy directors due to time constraints and cognitive resource limitations. Therefore, I expect the negative effect of director busyness to be more pronounced in complex firms. Masulis and Mobbs (2001) find that the positive impact of CID representation on firm performance is stronger in complex firms. Certified inside directors (CIDs) can be, therefore, be a valuable resource for outside directors to supply and decipher firm-specific information in complex firms. Since the significance of inside information is high in operationally complex firms, I expect to see the most pronounced mitigating effect of CIDs on director busyness in high complexity firms.

Complexity of a firm can be measured on different dimensions. Extant literature (Boone, Field, Karpoff and Raheja, 2007; Linck, Netter and Yang, 2008; Coles, Daniel and Naveen, 2008) find scope of operations, firm size, firm age, and the need for use of external debt as some of the measures to capture a firm's complexity. Accordingly, following the same procedure as with the factor score calculation for monitoring cost, I measure firm's complexity with a principal component factor of firm size, firm age, leverage and number of business segments. Then I create indicator variables for high complexity and low complexity. The High (Low) Complexity indicator equals one if a firm is in the top (bottom) quartile of the complexity factor score, and zero otherwise.

I examine the effect of the presence or absence of certified inside directors (CIDs) on Busy Boards in high and low complexity firms. The indicator variable Busy Board with CID (*busycid*) equals one if a firm has a Busy Board with the presence of a CID, and zero otherwise. The indicator variable Busy Board without CID (*busynocid*) equals one if a firm has a Busy Board but no CID is present on the board. These two indicator variables are interacted with the High and Low Complexity firm indicators to examine the impact of CIDs in mitigating the negative busyness effect on firm performance in different complexity levels. Tobin's Q is the dependent variable for all models.[12] Firm, industry and year fixed effects are employed for all regression models. The p-values are reported in parentheses and are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level.

In Model 1 in Table 14, I use interaction of the High and Low Complexity firm indicator with Busy Board with a CID (*busycid*). The coefficient of the interaction of Busy Board with CID and High Complexity is 0.109 and it is significant at the 1% level. The coefficient of the interaction of Busy Board with CID and Low Complexity is 0.096 and it is significant at the 1% level. That is, the mitigating impact of a certified inside director in a Busy Board is higher in high complexity firms. The Wald test shows that the impact of a CID on a Busy Board in highly complex firms is significantly higher (at the 1% level) than that of in low complexity firms.

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[12] Results are similar when return on assets (ROA) as used as the firm performance measure.

In Model-2, I use the interaction of both high and low complexity firm indicators with both Busy Board with a CID (*busycid*) and Busy Board without a CID (*busynocid*) indicators. The coefficients of the interaction with Busy-CID is 0.118 for high complexity and 0.098 for low complexity. Both coefficients are significant at the 1% level. Using a Wald test, I find that there is significant difference between these two coefficients at the 1% level. The coefficients of the interaction with Busy-NOCID for High Complexity and Low Complexity respectively are -0.017 (significant at the 1% level) and -0.054 (significant at the 10% level). The results suggest that in the absence of a certified inside director, directors' busyness is associated with negative firm performance for both high and low complexity firms. In sum, the results provide support for Hypothesis 3 that the mitigating effect of the presence of certified inside directors (CIDs) on director busyness is more pronounced in firms with a high level of complexity compared to that of in firms with a low level of complexity.

4.4 Mitigating Effect: Cash Holdings and Restatements

In this section, I examine two major firm actions where the board of directors has director oversight responsibilities: cash holdings and earnings restatements. I first examine how directors' busyness affects decision-making in these two areas and how the presence of a certified inside director (CID) alters the busyness effect.

4.4.1 Effect of Directors' Busyness and CIDs on Cash Holdings

Boards of directors have decision power over the level of cash reserves under management's control. The decision on how to utilize internal funds is at the center of the agency conflict between shareholders and managers (Jensen, 1986). Larger cash reserves without adequate oversight may lead to unnecessary investments or consumption of perks by management (Jensen and Meckling, 1976; Stulz, 1990). Therefore, the board will limit managers' access to free cash flow to mitigate agency conflicts (Jensen, 1986; Stulz, 1990). However, if effectively monitored, larger cash reserves can be a value enhancing provision because larger cash buildup minimizes missed investment opportunities and underinvestment (Myers and Majluf, 1984; Stulz, 1990). Busy boards lack adequate monitoring, and thus I expect Busy Boards to be associated with lower cash holdings. Several working papers studying the relation between directors' busyness and cash holdings (i.e., level of cash or value of cash) also support this view (Kim, 2015; Tarkovska, 2013). Extant literature studying the relation between corporate governance and corporate cash holdings in international settings provides evidence that greater shareholder rights are associated with lower cash holdings (Dittmar, Mahrt-Smith, and Servaes, 2003; Pinkowitz, Stulz, and Williamson, 2004). CIDs, on the other hand, contribute to enhanced board monitoring; thus firms with CIDs maintain larger cash reserves (Masulis and Mobbs, 2011). To the extent that CIDs enhance monitoring ability of overstretched directors by supplying inside knowledge on a firm's operations, I expect Busy Boards with a CID to be associated with larger cash reserves compared to Busy Boards without a CID.

I examine the impact of Busy Boards and CIDs on firm's cash holdings. The dependent variable in all models is cash and cash equivalents scaled by sales.[13] Following Masulis and Mobbs (2011) and Harford, Mansi, and Maxwell (2008), I control for measures related to firm performance and governance mechanisms that are found to affect cash holdings. CEO duality is an indicator variable that takes a value of one if the CEO also holds the position of chairman of the board, and zero otherwise. I measured firm leverage as the ratio of total debt (short- and long-term debt) to assets. R&D intensity is measured as the ratio of R&D to total assets, and is used as proxy for financial distress costs. Capital expenditure intensity is the ratio of capital expenditures to sales, and is used as a proxy for managers' attempt or willingness to increase firm size. Stock volatility is calculated as the standard deviation of the most recent three years of monthly stock returns from CRSP, and it serves as a proxy for business condition. Definitions of other control variables are same as described in earlier sections and in Appendix A (Variable Definitions). Firm, industry and year fixed effects are employed for all regression models. The p-values are reported in parentheses and are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level.

Results are reported in Table 15. In Model 1 and Model 2, I examine the association between Busy Boards and cash reserves. In Model 1, I use Busy Board Indicator as the board busyness measure. In Model 2, I use the percentage of busy outside directors to measure board busyness. In both cases, my busyness measures

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[13] I find similar results using market value of cash as the measure of cash holdings. Results are provided in the robustness section of this paper.

show significant negative loadings. The results provide evidence supporting Hypothesis 4 that Busy Boards are associated with lower cash holdings. Tarkovska (2013) also finds similar evidence that as board busyness increases beyond a certain threshold, it negatively affects cash holdings. Busy directors are overstretched and are time-constrained to provide adequate monitoring. This lack of oversight mandates lower cash reserves to prevent the use of cash for private benefit by unmonitored managers. This finding of a negative association between Busy Board and cash level is consistent with Harford, Mansi and Maxwell (2008) who find that firms with weaker governance are associated with lower cash holdings. In Model 4 and Model 5, I run a horserace between the counteracting effect of a Busy Board and CIDs on cash holdings using an interaction effect. My variable of interest is the interaction between CID Board and Busy Board variable in Model 4, and the interaction between CID Board and Percentage of Busy Outside Directors in Model 5. In both models, the interaction terms are positive and significant at the 1% level. It provides evidence supporting Hypothesis 4 that compared to the Busy Board firms without a CID, Busy Board firms with a CID are associated with larger cash holdings.

4.4.2 Effect of Directors' Busyness and CIDs on Earnings Restatement

Ensuring accuracy of financial statements is one of the key responsibilities of the board of directors. However, due to time and attentional resource limitations, it becomes comparatively difficult for busy directors to attain a proper understanding of the firm's

operation and performance. This may adversely impact directors' ability to detect management's efforts to inflate earnings. Consistent with this view, Masulis, Wang and Xie (2012) find that firms with foreign independent directors on their board are more likely to misreport earnings intentionally. They suggest that lax monitoring of management by these directors leads to earnings misreporting. Rowe and Shivadasan (2014) find that outside directors with seats on multiple boards are less committed to external monitoring, and that such directors are associated with more earnings management at their companies. Therefore, I hypothesize that busy directors are associated with a higher likelihood of earnings restatements in their firms. Certified inside directors (CIDs), on the other hand, enhance board effectiveness, and this leads to less frequent earnings overstatements. Masulis and Mobbs (2011) suggest that CIDs have stronger reputational incentives to "ensure that outside directors are well informed and able to assess the reliability of financial statements and thereby avoid earnings restatements." Moreover, since misreported earnings is damaging to a director's reputation and leads to subsequent loss of directorships (Srinivasan, 2005), certified inside directors (CIDs) will have greater incentive to ensure the accuracy of financial statements. So I expect Busy Boards with a CID to be associated with a lower likelihood of earnings restatements compared to the Busy Boards without a CID.

In this section, I examine whether busy directors in my sample are associated with a higher likelihood of earnings restatement and how the presence of a certified inside director (CID) alters this effect. I collect restatement announcement data from General

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Accounting Office (GAO) studies that cover earnings restatement announcements from 1997 to 2006. I supplement this data with restatement announcement data from Audit Analytics. I exclude restatements for underreported earnings or restatements that improve earnings. It is notable that the same earnings announcements may cover a period that affects multiple firm-years in my sample. In total, I have 5,114 firm-years with an incidence of restated earnings. I estimate a probit model of the likelihood of a firm misreporting its earnings. The dependent variable is an indicator variable that takes the value of one if the firm misreported earnings for any quarter during the year, and zero otherwise. Following Masulis and Mobbs (2011), I include control for firm and governance characteristics that are likely to affect the likelihood of misreporting. The market-to-book ratio is calculated as the year-end book value of assets plus the market value of equity less book value of equity, standardized by book value of total assets. Operating cash flow is calculated as the annual cash flow from operations divided by beginning-of-year total assets. R&D Intensity is measured as the ratio of R&D to total assets. CEO Age is simply the age of the CEO. Post-SOX is an indicator variable that equals one if the firm-year observations are from fiscal year 2001 or later, and zero otherwise. The p-values are reported in parentheses and are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level.

In Model 1 and Model 2 in Table 16, I use the Busy Board Indicator and percentage of busy outside directors, respectively as measures of busyness. I estimate the effect of board busyness on the likelihood of misreported earnings. The results show a positive

and significant effect of board busyness on the likelihood of earnings restatements. This indicates that outside directors' busyness is associated with a higher likelihood of earning restatements. In Model 3 and Model 4, I interact the board busyness measures with the presence of a CID indicator. The significant negative loadings on the interaction terms provide evidence that Busy Boards with a CID are less likely to misreport earnings compared to Busy Boards without a CID. The results provide support for Hypothesis 5 that in the presence of a CID, Busy Boards are less apt to experience earnings restatements.

One caveat of the above finding is that the restatement sample used in the tests includes certain mandatory restatements caused by changes in accounting standards. Restatements in response to SEC Staff Accounting Bulletin No. 101 (SAB 101) and Emerging Issues Task Force (ETIF) guidelines are example of such mandatory restatements. Following Peterson (2012), I was able to readily identify these restatements in the GAO restatement data. Therefore, to address the concern about mandatory restatements, I remove all revenue restatements in response to SAB 101 and ETIF during the sample period from the GAO accounting restatement dataset for the 1997 to 2006 period. Then I performed the regression analysis using only the cleaned GAO sample. The results (not reported) are similar to my analysis conducted using the full sample. This is consistent with Peterson (2012), who reported similar results excluding or including mandatory restatements in GAO data.

CHAPTER FIVE
ROBUSTNESS TESTS

5.1 Potential Endogeneity Issues

I discussed endogeneity issues in corporate governance and how they apply in the context of my study. Following extant literature that has attempted to address the endogeneity concerns with econometric methodologies, I re-estimated several key regressions using (a) lagged values of governance measure, (b) two-stage regression with instrumental variables, and (c) GMM estimator.

5.1.1 Lagged Values of Busyness and CID Measures

Results presented in Table 11 and Table 12 suggest that busy directors are overstretched and ineffective in monitoring, which in turn results in lower firm performance (Tobin's Q). However, by providing access to firm-specific information, certified inside directors (CID) enable busy outside directors to adequately monitor the management and, as a result, the presence of a CID on the board mitigates negative effects of director busyness. However, there may exist a possibility of reverse causality: firms with lower Tobin's Q may appoint expert, busy directors to change their fortune. To explore the direction of the causality, I follow Coles, Daniel and Naveen (2008) and Fich and Shivdasani (2006) to estimate the regression with lagged values of busyness and CID measures. The justification of this approach is that a firm's choice of appointment of busy

directors in prior years could not have been caused by the firm's performance in subsequent years. Therefore, use of lagged busyness and CID measures will allow me to mitigate the concern about reverse causation.

Results are reported in Table 17. In Models 1 and 2, I examine the effect of busyness on firm performance, and in Models 3 and 4, I examine the mitigating effect of certified inside directors. The coefficient on the busyness measure is significantly negative in Model 1 and Model 2. The coefficient of the busyness and CID interaction term is significantly positive in Model 3 and Model 4. That is, I continue to find that outside directors' busyness negatively affects firm performance and the presence of a CID mitigates the negative busyness effect.

I have also re-estimated the regression using lagged values of other board characteristics variables along with lagged values of busyness and CID measures. I find similar results (not tabulated): a significantly negative effect of busyness on firm performance and a significantly positive mitigating effect of the presence of a CID.

5.1.2 Two-Stage Least Squares with Instruments

To address the concern that both the appointment of busy directors or certified inside directors and firm performance may be jointly determined by an unobserved firm-specific factor, I follow the econometric approach of Field, Lowry and Mkrtchyan (2013)

and Masulis, Wang and Xie (2012) to estimate busyness and CID effect regressions using a two-stage least squares (2SLS) method. I employ firm, industry and year fixed effect regression framework in my main analysis to account for any time-invariant unobservable heterogeneity. Use of 2SLS complemented my fixed-effect regression analysis.

I construct two instrumental variables: (a) the number of public companies headquartered within a 100 miles radius of the firm and (b) the number of outside directors who are over 60 years of age. To qualify as a proper instrument, these variables need to be correlated with endogenous regression (i.e., director busyness) but uncorrelated with the error term that may affect firm performance. The first instrument is developed following a closely-related approach employed in Masulis, Wang and Xie (2012) and Coles, Daniel and Naveen (2012). Directors may take on additional directorships in firms that are located within short commute. Therefore, a number of public companies located within 100-mile radius of the firm will affect the probability of taking additional directorships for both outside directors and the firm's executives. The second instrument is adopted from Field, Lowry and Mkrtchyan (2013), who argue that directors who are older and more likely to be retired will have fewer time constraints, and thus, may take on additional directorships. The Angrist-Pischke F-statistic calculated in first-stage regression (not tabulated) is 13.18, which indicates that both instrumental variables are significant in explaining director busyness. The p-value for Hansen J-statistics is 0.23, which indicate that the equations are well-specified (i.e., instruments are uncorrelated with the error term and thus correctly excluded from the second-stage regression).

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Results of the second-stage regression are provided in Table 18. The results are similar to the results presented in Table 11 and Table 12. That is, directors' busyness is negatively associated with firm performance, and the presence of a certified inside director (CID) mitigates the negative busyness effect.

5.1.3 GMM Estimation

If the appointment of busy directors and firm performance are jointly determined by an unobserved firm-specific variable (unobserved heterogeneity), and at the same time the appointment of busy directors is determined by past performance (simultaneous endogeneity), then our fixed-effect regression results will be biased. Wintoki, Linck and Netter (2012) point out that researchers studying the relationship between board structure and firm performance can address unobserved heterogeneity, simultaneous endogeneity and dynamic endogeneity at the same time by employing GMM estimation. Proposed by Arellano and Bond (1991) and further developed by Arellano and Bover (1995) and Blundell and Bond (1998), the GMM estimator is an estimation methodology of dynamic systems.

In the context of this study, the GMM estimator will addresses dynamic endogeneity by allowing the current values of the busyness measures to be influenced by prior performance, past values of board busyness as well as past values of control variables. It will also include firm-fixed effects. So use of external instruments will not be

necessary as they were in 2SLS. In the GMM regression framework, I use one period lag and two period lag of Tobin's Q and all of the right-hand-side variables from our busyness-performance regression as instruments.

The results are reported in Table 19. My previous test results still hold: directors' busyness continues to be negatively associated with Tobin's Q, and the presence of a certified inside director continues to mitigate the negative busyness effect.

5.2 Market Value of Cash Holdings

Earlier, I examined the impact of directors' busyness and the mitigating impact of CIDs on the cash holdings level of a firm. However, the level of cash holdings may not accurately capture the financial slack permitted by the board and the agency problem associated with a cash stockpile. Moreover, some firms may need to hold more than others due to the nature of their business operations. The market value of cash holdings is a better measure to assess the extent of the agency problems associated with cash holdings. Consistent with this view, Dittmar and Mahrt-Smith (2007) find that shareholders assign a lower value to an additional dollar of cash when agency problems are likely to be greater at a firm. Therefore, I examine how director busyness affects the market value of cash and whether the presence of a certified inside director (CID) alters the busyness

effect on the market value of cash. Following Pinkowitz and Williamson (2004) and Pinkowitz and Williamson (2007), I estimate the following regression:

$$MarketCapitalization_{i,t} = \beta_0 + \beta_1 Cash_{i,t}{*}BusyCID_{i,t} + \beta_2 Cash_{i,t}{*}BusyNoCID_{i,t} +$$

$$\beta_3 Cash_{i,t}{*}NoBusyCID_{i,t} + \beta_4 BusyCID_{i,t} + + \beta_5 BusyNoCID_{i,t} +$$

$$\beta_6 NoBusyCID_{i,t} + \beta_7 Cash_{i,t} + \beta_8 Earnings_{i,t} + \beta_9 \Delta Earnings_{i,t} +$$

$$\beta_{10} \Delta Earings_{i,t+1} + \beta_{11} \Delta NetAssets_{i,t} + \beta_{12} \Delta NetAssets_{i,t+1} + \beta_{13} R\&D_{i,t} +$$

$$\beta_{14} \Delta R\&D_{i,t} + \beta_{15} \Delta R\&D_{i,t+1} + \beta_{16} Interests_{i,t} + \beta_{17} \Delta Interest_{i,t} + \beta_{18} \Delta Interest_{i,t+1}$$

$$+ \beta_{19} Dividends_{i,t} + \beta_{20} \Delta Dividends_{i,t} + \beta_{21} \Delta Dividends_{i,t+1} +$$

$$\beta_{22} \Delta MarketCapitalization_{i,t+1} + \varepsilon_{i,t}$$

MarketCapitalization (market value of the firm) is calculated as the sum of the market value of equity and the book values of short-term debt and long-term debt. *BusyCID* is an indicator variable that takes a value of one if the firm has a Busy Board with a CID, and zero otherwise. *BusyNoCID* is an indicator variable that takes a value of one if the firm has a Busy Board without a CID, and zero otherwise. *NoBusyCID* is an indicator variable that takes a value of one if the firm does not have a Busy Board but has a CID on the board, and zero otherwise. *Cash denotes* liquid asset holdings, and it is calculated as the sum of cash and marketable securities. *Earnings* is calculated as earnings before extraordinary items plus interest, deferred tax credits, and investment tax credits. *NetAssets, R&D, Interests and Dividends* denote net assets, research and development expense, interest expense and common dividends paid, respectively. $\Delta X_{i,t}$

denotes change in the level of the variable X from t-1 to t. $\Delta X_{i,t+1}$ denotes change in the level of the variable X from t to t+1. All variables are standardized by dividing by the level of net assets.

The regression is estimated using Fama-MacBeth methodology, in which cross-sectional regressions are run for every year. The reported coefficients and standard errors are the average of the cross-sectional regression coefficients and standard errors. In this regression framework, the coefficient of the interaction terms are a measure of the market value of a marginal dollar of cash for firm-specific board characteristics. I am interested in evaluating β_1 and β_2, which will show how the market value of a dollar differs when a certified inside director (CID) is present or absent on a Busy Board.

The results are reported in Table 20. The coefficient of the Busy-CID & Cash Interaction term is 1.016, and it is significantly positive at a 1% level. The coefficient of the Busy-NOCID & Cash Interaction term is -0.857, and it is significantly negative at a 1% level. The results provide evidence that directors' busyness decreases the value of cash holdings, but this negative effect of busyness is mitigated when a CID is present on the board. A Busy Board with a CID increases the value of cash holdings. A Wald test comparing these two coefficients shows a significant difference. The results are consistent with the results I find with level of cash holding regressions. The results are also in line with the findings of Dittmar and Mahrt-Smith (2007), who find that the marginal

dollar of cash in firms with poor governance is valued between $0.42 and $0.88, whereas the marginal dollar of cash in firms with good governance is as much as $1.62.

5.3 Effect of Non-CIDs

My results support the hypothesis that certified inside directors (CIDs) mitigates the negative busyness effect. In this section I investigate whether non-CIDs have a similar mitigating effect. Non-CIDs are company executives who sit on the company board, but do not hold any outside directorships in unaffiliated firms.

The results are presented in Table 21. The coefficient of the interaction term between non-CID and busyness measures is negative, but statistically insignificant. This indicates that the presence of non-CIDs is not associated with any mitigating effect. This finding is consistent with Masulis and Mobbs (2011), who find that non-CIDs are not associated with improved firm performance and in some cases non-CIDs show firm-performance-distracting characteristics. They suggest that non-CIDs are selected on the board for their interest-alignment with the CEO, rather than for their likely contributions to effective board decision-making. Overall, my results suggest that among the inside directors, board-enhancing characteristics are limited to certified inside directors (CIDs) only.

5.4 Effect of Sarbanes-Oxley Act (SOX)

The implementation of the provisions of the Sarbanes-Oxley Act (SOX) during our sample period has affected different aspects of corporate governance, including liability of outside directors and the proportion of inside directors on boards (Linck, Netter and Yang, 2009). This may alter the directors' busyness effect and the extent to which CIDs alter this effect. To investigate the impact of SOX on our study, I re-estimate the directors' busyness effect and CIDs' mitigating effect regressions for both pre-SOX and post-SOX periods. Following Masulis and Mobbs (2011), I define post-SOX period observations as the firm-year observations occurring in fiscal year 2001 or later.

The results are reported in Table 22 (Pre-SOX) and Table 23 (Post-SOX). The results indicate that the negative busyness effect on firm performance and the mitigating effect of CIDs similarly hold for both pre-SOX and post-SOX periods. This is consistent with Field, Lowry and Mkrtchyan (2013), who find no significant impact of SOX on the directors' busyness effect. However, the magnitude of the coefficients of the busyness measure becomes weaker (i.e., less negative) in the post-SOX period, and the magnitude of the coefficients of the busyness-CID interaction term becomes stronger (i.e., more positive) in the post-SOX period. For instance, the coefficient of busyness measures during the pre-SOX period are -0.055 and -0.074, both of which are significant at the 1% level. The coefficient of the same busyness measures for the post-SOX period diminishes in its negativity to -0.032 and -0.31, both of which are significant at the 1% level. That is, the magnitude of the negative effect diminished in the post-SOX period. This may be a

result of increased director responsibility (Linck, Netter and Yang, 2009) arising from the enactment of SOX, which, in turn, may have motivated directors to monitor more diligently. Similarly, the coefficient of the busyness and CID interaction terms for the pre-SOX period are 0.106 and 0.075, both of which are significant at the 1% level. These coefficients increased in magnitude to 0.110 and 0.091 during the post-SOX period. That is, the magnitude of the mitigating effect of certified inside directors (CID) has become stronger in the post-SOX period. This is consistent with Masulis and Mobbs (2011), who explain that firms face increased pressure to reduce inside directors during the post-SOX period, and thus, the smaller pool of inside directors is gaining greater labor market visibility. This greater visibility gives stronger incentives to a certified inside director (CID) to participate actively on the board decision-making. A test (i.e., seemingly unrelated estimation in STATA) for comparison of the coefficients reveals that there are significant differences between the respective coefficients in pre-SOX and post-SOX regressions for both the busyness measure and busyness-CID interaction.

It is important to note that the BoardEx data coverage includes 1500 to 1900 firms till year 2002 and these firms roughly correspond to the S&P 1500 firms. In year 2003, BoardEx coverage was expanded to include Russell 3000 firms that brought many smaller firms under BoardEx coverage. This essentially creates a sample selection bias. However, the BoardEx expansion period closely corresponds to the SOX enactment period. Therefore, the tests that I conduct in this section by splitting the sample into pre-

SOX and post-SOX period also address the selection bias concern for BoardEx data expansion.

5.5 Alternate Busyness Measures

I have used two busyness measures in my main analysis: Busy Board and Percentage of Busy Outside Directors. A director is defined as busy if he/she sits on three or more boards. Percentage of busy directors is a continuous measure and is calculated as the fraction of outside directors who are busy. Busy Board is an indicator variable that takes a value of one if the percentage of busy directors on a board is 50% or higher, and zero otherwise. The three-directorship criterion for defining busyness has been extensively used in the literature (Fich and Shivdasani, 2006; Ferris, Jagannathan and Pritchard, 2003). It also reflects the recommendations from investor organizations (i.e., Council of Institutional Investors), who recommend that directors should sit on no more than two boards. Cashman, Gillan and Jun (2012) experiment with different thresholds for defining busyness, and find that a three-directorship based definition provides the most consistent results. They also define busyness by using (a) different thresholds for directors who are retired, and (b) different thresholds depending on firm complexity. They find the three-directorship definition to be "as informative as the more complex data-intensive proxies". In this section, I focus on defining busyness based on directors' focus, average time requirement per directorship, and different thresholds for defining the Busy Board Indicator.

5.5.1 Directors' Focus

Masulis and Mobbs (2011) find that directors with multiple directorships distribute their effort unequally based on the directorships' relative prestige. Relative prestige of the firm affects the reputation incentives in the director labor market. Accordingly, time-constrained directors holding multiple directorships prioritize among their directorships and put more effort into the directorships of more prestigious firms. Based on this finding, I develop an alternate measure of busyness that takes into account the amount of focus the director puts into the directorship. For each director, I compute the total market capitalization of the firms where a director holds directorships. Then, I assign a director's focus in a particular firm based on the fraction of the market capital of the firm relative to the total market capitalization of the firms in the director's directorship portfolio. This results in a director focus value for every director observation in my dataset. Finally, I compute the average director focus value in a firm based on the average director focus of all outside directors in the firm. I use this average director focus value as the busyness measure. A lower value of the average director focus implies that the outside directors of the firm are less focused on the company. We expect a positive relation between director focus and firm performance.

The director focus calculation process is illustrated with the following example: Mr. Vernon Jordan held directorships on the boards of four companies in fiscal year 2005. These companies are Sara Lee Corp., JC Penny Co. Inc., Dow Jones & Co. Inc., and Xerox Corp. The total market capitalization of these companies in 2005 was

$45,589,335,856. The market capitalization of Xerox Corp. was 14,069,888,934. The director focus of Mr. Vernon Jordan on Xerox Corp. is 30.86%. Following this procedure, I calculate director focus for all outside directors of Xerox Corp. in 2005 and then compute the average. This number provides the average director focus of all outside directors in the firm in a particular year. For example, the average director focus of Xerox Corp. in 2005 was 75.54%.

I re-estimated my regressions using average director focus as the busyness measure. The results are reported in Models 1 and 2 in Table 24. The coefficient of director focus is positive and significant at the 1% level. The presence of CID on the board enhances the positive impact of director focus on firm performance. The results are consistent with the earlier results: director focus (i.e., not busy) is associated with positive firm performance, and the presence of a CID enhances board effectiveness.

5.5.2 Directors' Required Time Commitment

Busyness measures based on number of directorships does not take the inter-temporal change in required time commitment into consideration. The average time commitment required for a single board directorship has increased from 207.4 hours per year in 2007 to 242.1 hours per year in 2014. A director who held three directorships in 2014 spent 104 hours more on average compared to a director holding same number of directorships in 2007. To address this concern, I create a busyness measure of total time

commitment by multiplying the number of directorships by the average director time commitment required for a particular year based on the director time commitment data provided by National Association of Corporate Directors (NACD). For each firm-year, I calculate the average time commitment of all the outside directors and use this as a busyness measure in my regression analysis.

The National Association of Corporate Directors (NACD) reports that the average time commitment required for each directorship has been increasing over the years. NACD provided me with data on the director time commitment for 2007-2014 time period. I have extended the time period back to 2002 with various online sources that reported director time commitment statistics with NACD reference. Average required director time commitment data by years are provided in Appendix-B. The methodology used by NACD for calculating director time commitment differs among years prior 2008. However, since 2008, the average director time commitment is calculated using director time spent on (a) board and committee meetings, (b) informal meetings or conversations with management[14] (c) reviewing reports and other materials, (d) traveling to/from board events, (e) director education, (f) representing the company at public events, and (g) others (e.g., board social events).

The results are reported in Models 3 and 4 in Table 24. The results are similar to my earlier analysis. I also test the impact of busyness by defining a director as busy when

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[14] NACD started collecting data on informal meetings or conversations with management in 2014.

his/her time commitment is above the median time commitment for the directors in a particular year. The results (not tabulated) remain the same with this busyness definition.

5.5.3 Different Threshold for Busy Board Definition

In earlier sections of this study, I defined Busy Board as an indicator variable that equals one if 50% or more of the outside directors are busy. As a robustness test, I examine how changing the definition of Busy Board with different percentages of busy director thresholds impact the relation between busy directors and firm performance. I define a board as a Busy Board when (a) 30% of outside directors are busy, (b) 35% of outside directors are busy, (c) 40% of outside directors are busy, and (d) 45% of outside directors are busy. The effect of directors' busyness on firm performance is statistically insignificant for 30%, 35%, and 40% thresholds. This is consistent with Cashman, Gillan and Jun (2012) who find that the impact of busy directors on firm performance loses statistical significance when the threshold for busyness dentition is relaxed or broadened.

The results (not tabulated) are similar for Busy Board definitions with thresholds of 45% and 50%. With my current Busy Board dentition with a 50% threshold, I have 2,744 Busy Boards and 283 Busy Boards with a CID. If I use a 45% threshold, the number of Busy Boards and the number of Busy Boards with a CID in my sample increases slightly to 2,789 and 290, respectively.

Overall, I find that my results are robust to alternate busyness definitions. This is consistent with an observation in Cashman, Gillan and Jun (2012). They comment that "future researchers can avoid the data collection and cleaning associated with the busyness measures we examine and focus on the relatively straightforward proxy used in the prior literature."

CHAPTER SIX
CONCLUSION

The academic literature provides evidence that multiple directorships represent a certification of quality. Therefore, it should be beneficial to have busy outside directors on a board. There is also evidence in the literature that busy directors are over-stretched in time and commitment and thus, they are ineffective monitors of management. Accordingly, the presence of busy directors on a board is associated with worse firm performance. Even though some evidence refutes this negative busyness effect, in practice, firms seem to believe in the critical view of multiple directorships. More than 77% of firms currently have various forms of restrictions on holding multiple directorships. Although Busy Boards, composed mostly of busy outside directors, are negatively associated with firm performance, recent literature provides evidence that the presence of certified inside directors (i.e., non-CEO inside directors with directorships in unaffiliated firms) on board is associated with a positive effect on firm performance. The reputational incentives of the director labor market act as a driving factor for the Certified inside directors (CIDs) to collaborate with outside directors in enhancing firm performance. In this paper, I investigated whether the presence on the board of certified inside directors (CIDs) can mitigate the negative effect of outside directors' busyness.

Using a sample of 43,705 firm-years from the Risk Metrics and BoardEx Dataset, I found evidence that the busyness of outside directors is negatively associated with firm performance. However, the reputational incentives of non-CEO inside directors with

outside directors (CIDs) help mitigate the deficiencies of the overstretched busy outside directors of the firm. The results show that when one or more CIDs are present on the board, the negative association between an outside director's busyness and firm performance ceases. However, firms that feature a Busy Board without the presence of a CID continue to experience a negative busyness effect on firm performance. This result is robust after I address the potential endogeneity issues.

CIDs can help busy outside directors to provide adequate oversight of management by facilitating access to firm-specific information and by helping form a better comprehension of the information. Therefore, the impact of the presence of CIDs in mitigating the negative effects of outside directors' busyness should be more pronounced in high monitoring cost and high complexity firms, where firm-specific information is essential for effective monitoring. To test this hypothesis, I examined the role of CIDs in mitigating negative busyness effects in high and low monitoring cost environment firms, as well as high and low complexity firms. I find that the presence of a CID in a firm with a Busy Board is more beneficial in firms that operate in a high monitoring cost environment and that have a high level of organizational/operational complexity.

I also examined two key decision areas where the board has direct oversight or approval rights: the determination of the cash holdings level and ensuring the accuracy of financial statements. The lack of adequate monitoring by a Busy Board will be most evident and the impact of CIDs on director busyness will be more direct in those key

action areas. Firms that lack adequate oversight tend to maintain a lower cash holding to prevent unmonitored management from consuming perks and overinvesting. I find that Busy Boards maintain lower cash levels to cover their monitoring deficiencies, and the presence of CIDs on Busy Boards alters the cash holding levels. Due to time and attention constraints, Busy Boards may lack the understanding of the firms' performance, which is essential for assessing the accuracy of financial statements, and thereby reducing the likelihood of misreported earnings. I find that Busy Boards are more likely to experience earning restatements, and CID representation on Busy Boards mitigates this effect.

The existing literature provides evidence on the isolated effects of outside director's busyness or inside director's certification incentives. Focusing on the interaction between inside and outside directors, I provide evidence that support the view that a cooperative tandem role between inside and outside directors may help mitigating the negative effects director busyness on firm performance.

From anecdotal evidence of the restriction on multiple directorships, it appears that due to the costs associated with having busy directors on a board, firms are willing to forgo the benefits of the expertise of reputed busy outside directors. In this paper, I show that CIDs can provide a channel through which firms can accommodate busy reputed outside directors on a board and at the same time mitigate the negative busyness effects.

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APPENDIX

TABLE 1: Number of Busy Boards and CID Boards in Sample

This table presents the matrix of the number of CID Board and Busy Board in the sample. The sample consists of 43,705 firm-year observations for 5747 companies between 1997 and 2013. Panel A presents the number of firm-years in the intersection of the Busy Board and CID Board matrix. Panel B presents the number of firms in the intersection of the Busy Board and CID Board matrix. Busy Board refers to the firms where a majority of the outside directors hold three or more directorships. Non-Busy Board refers to the firms where a majority of the outside directors hold fewer than three directorships. CID Board refers to the firms where at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm. Non-CID Board refers to the firms where either no non-CEO inside director is included on the board or no non-CEO inside director holds directorships at an unaffiliated firm.

Panel A: Number of Firm-Years			
	Busy Board	Non-Busy Board	Total
CID Board	283	2337	2620
NON-CID Board	2461	38624	41085
Total	2744	40961	43705

Panel B: Number of Firms			
	Busy Board	Non-Busy Board	Total
CID Board	147	832	885
NON-CID Board	1117	5534	5685
Total	1177	5595	5747

TABLE 2: Distribution of Directorships Held

This table reports the distribution of directors based on the number of directorships held by the directors in the sample between 1997 and 2003. The directorship counts and the number of directors reported on the table includes both inside and outside directors.

Total Directorships	Directors	% of Directors
1	248,289	80.87
2	39,338	12.81
3	13,191	4.3
4	4,205	1.37
5	1,368	0.45
6	406	0.13
7	108	0.04
8	72	0.02
9	20	0.01
10	10	0
Total	357,007	100.00

TABLE 3: Annual Distribution of Outside Directors

This table presents annual distribution of the number of directors, outside directors and busy outside directors in the sample between 1997 and 2013. Number of directors in a year refers to the number of unique directors in the sample for that particular year. Outside directors are directors on the board who do not have any material relationship with the company or its affiliates (i.e., independent directors). Busy directors refers to the outside directors who hold three or more directorships.

Year	Directors	Outside Directors	Busy Outside Directors	% of Busy Directors (Busy Outside Directors/Directors	% of Busy Directors (Busy Outside Directors/Outside Directors
1997	11,140	6,577	845	7.59%	12.85%
1998	12,262	7,222	1,187	9.68%	16.44%
1999	12,325	7,296	1,381	11.20%	18.93%
2000	15,106	8,688	1,389	9.20%	15.99%
2001	15,673	9,369	1,422	9.07%	15.18%
2002	15,079	9,506	1,336	8.86%	14.05%
2003	23,981	15,779	2,134	8.90%	13.52%
2004	26,583	18,262	2,527	9.51%	13.84%
2005	27,808	19,502	2,678	9.63%	13.73%
2006	27,775	19,677	2,533	9.12%	12.87%
2007	27,017	19,776	2,702	10.00%	13.66%
2008	25,502	18,895	2,373	9.31%	12.56%
2009	24,219	18,091	2,149	8.87%	11.88%
2010	23,958	18,053	2,099	8.76%	11.63%
2011	23,769	17,899	2,006	8.44%	11.21%
2012	23,684	17,888	1,929	8.14%	10.78%
2013	21,350	16,014	1,755	8.22%	10.96%

TABLE 4: Annual Distribution of Inside Directors

This table presents annual distribution of the number of directors, inside directors and certified inside directors (CIDs) in the sample between 1997 and 2013. Number of directors in a year refers to the number of unique directors in the sample for that particular year. Inside directors are executives of the company who hold directorship on the company's board. Certified inside directors (CIDs) refers to the non-CEO inside directors who also hold a directorship at an unaffiliated firm.

Year	No. of Directors	No. of Inside Directors	% of Inside Directors	Number of CIDs	% of CIDs among Insider Directors
1997	11,140	2,650	23.79%	170	6.42%
1998	12,262	2,890	23.57%	191	6.61%
1999	12,325	2,858	23.19%	179	6.26%
2000	15,106	3,539	23.43%	169	4.78%
2001	15,673	3,556	22.69%	163	4.58%
2002	15,079	3,192	21.17%	129	4.04%
2003	23,981	5,101	21.27%	198	3.88%
2004	26,583	5,383	20.25%	209	3.88%
2005	27,808	5,400	19.42%	188	3.48%
2006	27,775	5,246	18.89%	207	3.95%
2007	27,017	5,105	18.90%	170	3.33%
2008	25,502	4,646	18.22%	162	3.49%
2009	24,219	4,338	17.91%	152	3.50%
2010	23,958	4,212	17.58%	121	2.87%
2011	23,769	4,169	17.54%	127	3.05%
2012	23,684	4,130	17.44%	134	3.24%
2013	21,350	3,610	16.91%	122	3.38%

TABLE 5: Annual Distribution of Busy Board and CID Board

This table presents annual distribution of the number of firms, Busy Boards and CID Boards in the sample between 1997 and 2013. Busy Board refers to the firms where a majority of the outside directors hold three or more total directorships. CID Board refers to the firms where at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm.

Year	Firms	Busy Board	% of Firm with Busy Board	CID Board	% of Firm with CID Board
1997	1204	50	4.15%	155	12.87%
1998	1347	106	7.87%	169	12.55%
1999	1354	127	9.38%	160	11.82%
2000	1753	140	7.99%	154	8.78%
2001	1841	136	7.39%	155	8.42%
2002	1754	94	5.36%	121	6.90%
2003	3011	157	5.21%	188	6.24%
2004	3353	192	5.73%	196	5.85%
2005	3519	210	5.97%	178	5.06%
2006	3495	209	5.98%	195	5.58%
2007	3431	243	7.08%	162	4.72%
2008	3191	180	5.64%	155	4.86%
2009	3025	152	5.02%	146	4.83%
2010	2973	158	5.31%	116	3.90%
2011	2940	170	5.78%	122	4.15%
2012	2917	165	5.69%	131	4.49%
2013	2597	147	5.67%	117	4.51%

TABLE 6: Annual Distribution of Busy Boards with Certified Inside Director (CID)

This table presents the annual distribution of Busy Boards where at least one certified inside director (CID) is present on the board. (i.e., Firms in BUSYBOARD and CIDBOARD Interaction). Busy Board refers to the firms where a majority of the outside directors hold three or more directorships. Certified inside directors (CIDs) refers to the non-CEO inside directors who also hold a directorship at an unaffiliated firm. CID Board refers to the firms where at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm.

Year	Firms
1997	12
1998	25
1999	22
2000	19
2001	17
2002	14
2003	19
2004	20
2005	22
2006	16
2007	21
2008	12
2009	12
2010	11
2011	12
2012	16
2013	13
Total	283

TABLE 7: Descriptive Statistics for the Full Sample

This table presents the descriptive statistics of board and firm characteristics for the full sample between 1997 and 2013. Tobin's Q is calculated as the market value of the firm's equity plus the difference between the book value of the firm's assets and equity, divided by the book value of the firm's assets. ROA is calculated as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets, divided by the average of the beginning and year end book value of total assets. Total assets and total sales are those reported by Compustat at year-end. Operating margin is estimated as annual operating income scaled by total assets. Directorships by CEO is calculated as the natural log of the number of directorship held by the CEO. Ownership by CEO is measured as the percentage of common shares held by the CEO. Ownership by Directors is measured as the percentage of common shares held by the directors combined (excluding the CEO). Board Size is measured as the natural log of the number of total directors on the firm's board. Board Composition is measured by the percentage of outside directors on the board and it is calculated as number of outside directors scaled by board size. Directors holding three or more directorships are considered busy. Busy Board is an indicator variable which equals one when a majority (50% or more) of outside directors are busy and zero otherwise. Percentage of Busy Directors measures the percentage of outside directors who are busy. Firm Age is calculated as the number of years since a firm first included in CRSP database. Depreciation-to-Sales ratio is used as a proxy for Growth Opportunities and this ratio is calculated as Depreciation expense scaled by net sales. Number of Business Segments measures the number of business segments based on COMPUSTAT segments data.

Variables	N	Mean	Median	STD
Tobin's Q	43,364	2.08	1.66	1.39
Return on Assets	43,483	0.06	0.1	0.19
Sale/Assets Ratio	43,634	1.02	0.89	0.72
Operating Margin Ratio	43,584	0.07	0.11	0.18
Total Assets	43,637	2,589.62	530.17	5,389.83
Sales	43,652	2,253.55	481.31	4,589.78
Directors Ownership %	43,188	4.36	2.09	7.49
CEO Ownership %	43,173	3.01	1.59	4.92
Board Size	43,705	8.16	8	2.31
Independent Directors %	43,705	69.34	71.43	16.47
Busy Director %	43,705	13.49	0	17.08
Busy Board	43,705	0.06	0	0.24
Firm Age	43,705	17.55	12	16.61
Business Segments	43,705	2.16	1	1.54

TABLE 8: Descriptive Statistics for Firms with and without Busy Board Subsamples

This table presents the descriptive statistics of board and firm characteristics for the firms with and without Busy Board subsamples between 1997 and 2013. Firms with a Busy Board refer to the firms where a majority of outside directors are busy (i.e., hold three or more directorships). Firms without a Busy Board refer to the firms where a majority of outside directors are not busy. Descriptive statistics for firms with a Busy Board are presented in Panel A. Descriptive statistics for firms without a Busy Board are presented in Panel B. Tobin's Q is calculated as the market value of the firm's equity plus the difference between the book value of the firm's assets and equity, divided by the book value of the firm's assets. ROA is calculated as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets, divided by the average of the beginning and year end book value of total assets. Total assets and total sales are those reported by Compustat at year-end. Operating margin is estimated as annual operating income standardized by total assets. Directorships by CEO is calculated as the natural log of the number of directorship held by the CEO. Ownership by CEO is measured as the percentage of common shares held by the CEO. Ownership by Directors is measured as the percentage of common shares held by the directors combined (excluding the CEO). Board Size is measured as the natural log of the number of total directors on the firm's board. Board Composition is measured by the percentage of outside director on the board and it is calculated as number of outside directors scaled by board size. Directors holding three or more directorships are considered busy. Busy Board is an indicator variable which equals one when a majority (50% or more) of outside directors are busy and zero otherwise. Percentage of Busy Directors measures the percentage of outside directors who are busy. Firm Age is calculated as the number of years since a firm first included in CRSP database. Depreciation-to-Sales ratio is used as a proxy for Growth Opportunities and this ratio is calculated as Depreciation expense scaled by net sales. Number of Business Segments measures the number of business segments based on COMPUSTAT segments data. $*$, $**$, and $***$ indicate statistical significance at the 10%, 5%, and 1% levels, respectively, based on a two-tailed t-test of the difference in means.

Variables	N	Mean	Median	STD
Panel A: Firms with a Busy Board				
Tobin's Q	2,722	2.33***	1.81	1.60
Return on Assets	2,739	0.04***	0.10	0.21
Sale/Assets Ratio	2,736	0.90***	0.79	0.66
Operating Margin Ratio	2,735	0.04***	0.10	0.20
Total Assets	2,737	4,318.02***	975.50	7,255.57
Sales	2,738	3,651.25***	763.52	6,138.05
Directors Ownership %	2,720	4.14	1.54	8.37
CEO Ownership %	2,724	2.91	1.15	5.53
Board Size	2,744	8.37***	8.00	2.54
Independent Directors %	2,744	67.41***	71.43	18.13
Busy Director %	2,744	56.74	55.56	7.13
Busy Board	2,744	1.00***	1.00	0.00
Firm Age	2,744	15.08***	8.00	18.85
Business Segments	2,744	2.16	1.00	1.65
Panel B: Firms without a Busy Board				
Tobin's Q	40,642	2.06***	1.66	1.37
Return on Assets	40,744	0.07***	0.11	0.19
Sale/Assets Ratio	40,898	1.03***	0.89	0.72
Operating Margin Ratio	40,849	0.07***	0.11	0.18
Total Assets	40,900	2,473.96***	514.57	5,221.06
Sales	40,914	2,160.01***	469.51	4,451.52
Directors Ownership %	40,468	4.37	2.14	7.43
CEO Ownership %	40,449	3.01	1.63	4.88
Board Size	40,961	8.15***	8.00	2.29
Independent Directors %	40,961	69.47***	71.43	16.34
Busy Director %	40,961	10.59***	0.00	13.20
Busy Board	40,961	0.00	0.00	0.00
Firm Age	40,961	17.72***	13.00	16.44
Business Segments	40,961	2.16	1.00	1.53

TABLE 9: Descriptive Statistics for Firms with and without CID Board Subsamples

This table presents the descriptive statistics of board and firm characteristics for the firms with and without CID Board subsamples between 1997 and 2013. Firms with a CID Board refer to the firms where at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm. Firms without a CID Board refer to the firms where no non-CEO inside directors is present on the board or none of the non-CEO inside directors holds a directorship at an unaffiliated firm. Descriptive statistics for firms with a CID Board are presented in Panel A. Descriptive statistics for firms without a CID Board are presented in Panel B. Tobin's Q is calculated as the market value of the firm's equity plus the difference between the book value of the firm's assets and equity, divided by the book value of the firm's assets. ROA is calculated as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets, divided by the average of the beginning and year end book value of total assets. Total assets and total sales are those reported by Compustat at year-end. Operating margin is estimated as annual operating income standardized by total assets. Directorships by CEO is calculated as the natural log of the number of directorship held by the CEO. Ownership by CEO is measured as the percentage of common shares held by the CEO. Ownership by Directors is measured as the percentage of common shares held by the directors combined (excluding the CEO). Board Size is measured as the natural log of the number of total directors on the firm's board. Board Composition is measured by the percentage of outside director on the board and it is calculated as number of outside directors scaled by board size. Directors holding three or more directorships are considered busy. Busy Board is an indicator variable which equals one when a majority (50% or more) of outside directors are busy and zero otherwise. Percentage of Busy Directors measures the percentage of outside directors who are busy. Firm Age is calculated as the number of years since a firm first included in CRSP database. Depreciation-to-Sales ratio is used as a proxy for Growth Opportunities and this ratio is calculated as Depreciation expense scaled by net sales. Number of Business Segments measures the number of business segments based on COMPUSTAT segments data. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively, based on a two-tailed t-test of the difference in means.

Variables	N	Mean	Median	STD
Panel A: Firms with a CID Board				
Tobin's Q	2,609	2.13**	1.67	1.46
Return on Assets	2,615	0.11***	0.13	0.15
Sale/Assets Ratio	2,618	1.05*	0.92	0.71
Operating Margin Ratio	2,618	0.11***	0.13	0.14
Total Assets	2,619	6,150.71***	2,274.30	8,054.90
Sales	2,620	5,378.32***	1,996.43	6,881.55
Directors Ownership %	2,605	4.92***	1.88	8.57
CEO Ownership %	2,603	2.82*	0.75	5.79
Board Size	2,620	10.14***	10.00	2.72
Independent Directors %	2,620	63.68***	66.67	14.20
Busy Director %	2,620	18.77***	14.84	19.08
Busy Board	2,620	0.11***	0.00	0.31
Firm Age	2,620	23.81***	17.00	19.96
Business Segments	2,620	2.63***	2.00	1.89
Panel B: Firms without a CID Board				
Tobin's Q	40,755	2.07**	1.66	1.39
Return on Assets	40,868	0.06***	0.10	0.19
Sale/Assets Ratio	41,016	1.02*	0.88	0.72
Operating Margin Ratio	40,966	0.06***	0.11	0.19
Total Assets	41,018	2,362.24***	487.34	5,089.46
Sales	41,032	2,054.02***	442.38	4,327.27
Directors Ownership %	40,583	4.32***	2.13	7.42
CEO Ownership %	40,570	3.02*	1.66	4.86
Board Size	41,085	8.04***	8.00	2.22
Independent Directors %	41,085	69.70***	71.43	16.53
Busy Director %	41,085	13.15***	0.00	16.89
Busy Board	41,085	0.06***	0.00	0.24
Firm Age	41,085	17.16***	12.00	16.29
Business Segments	41,085	2.13***	1.00	1.51

TABLE 10: Descriptive Statistics for Busy-CID Board and Busy-NOCID Board Subsamples

This table presents the descriptive statistics of board and firm characteristics for the Busy-CID Board and Busy-NOCID Board Subsamples between 1997 and 2013. Firms with Busy-CID Board refer to the firms where a majority of the outside directors are busy (i.e., hold three or more directorships) and at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm. Firms with Busy-NOCID Board refers to the firms where a majority of the outside directors are busy, but a certified inside director (CID) is not present on the board. Certified inside directors (CIDs) are non-CEO inside directors who hold a directorship at an unaffiliated firm. Descriptive statistics for firms with Busy-CID Board are presented in Panel A. Descriptive statistics for firms with Busy-NOCID Board are presented in Panel B. Tobin's Q is calculated as the market value of the firm's equity plus the difference between the book value of the firm's assets and equity, divided by the book value of the firm's assets. ROA is calculated as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets, divided by the average of the beginning and year end book value of total assets. Total assets and total sales are those reported by Compustat at year-end. Operating margin is estimated as annual operating income standardized by total assets. Directorships by CEO is calculated as the natural log of the number of directorship held by the CEO. Ownership by CEO is measured as the percentage of common shares held by the CEO. Ownership by Directors is measured as the percentage of common shares held by the directors combined (excluding the CEO). Board Size is measured as the natural log of the number of total directors on the firm's board. Board Composition is measured by the percentage of outside director on the board and it is calculated as number of outside directors scaled by board size. Directors holding three or more directorships are considered busy. Busy Board is an indicator variable which equals one when a majority (50% or more) of outside directors are busy and zero otherwise. Percentage of Busy Directors measures the percentage of outside directors who are busy. Firm Age is calculated as the number of years since a firm first included in CRSP database. Depreciation-to-Sales ratio is used as a proxy for Growth Opportunities and this ratio is calculated as Depreciation expense scaled by net sales. Number of Business Segments measures the number of business segments based on COMPUSTAT segments data. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively, based on a two-tailed t-test of the difference in means.

Variables	N	Mean	Median	STD
Panel A: Firms with Busy-CID Board				
Tobin's Q	282	2.44***	1.89	1.71
Return on Assets	283	0.12***	0.14	0.16
Sale/Assets Ratio	283	1.00**	0.92	0.65
Operating Margin Ratio	283	0.12***	0.13	0.15
Total Assets	283	8,527.66***	3,352.79	9,490.37
Sales	283	7,463.40***	3,208.87	7,933.04
Directors Ownership %	283	5.16**	1.53	9.64
CEO Ownership %	283	3.65**	0.69	7.65
Board Size	283	10.33***	10.00	2.84
Independent Directors %	283	59.15***	62.50	14.88
Busy Director %	283	57.56**	57.14	7.05
Busy Board	283	1.00	1.00	0.00
Firm Age	283	23.13***	16.00	21.43
Business Segments	283	3.04***	3.00	2.23
Panel B: Firms with Busy-NOCID Board				
Tobin's Q	2,440	2.31***	1.80	1.59
Return on Assets	2,456	0.03***	0.09	0.21
Sale/Assets Ratio	2,453	0.89**	0.77	0.67
Operating Margin Ratio	2,452	0.04***	0.10	0.21
Total Assets	2,454	3,832.55***	807.28	6,788.39
Sales	2,455	3,211.81***	683.23	5,737.54
Directors Ownership %	2,437	4.02**	1.54	8.21
CEO Ownership %	2,441	2.83**	1.22	5.22
Board Size	2,461	8.15***	8.00	2.41
Independent Directors %	2,461	68.36***	71.43	18.23
Busy Director %	2,461	56.64**	55.56	7.13
Busy Board	2,461	1.00	1.00	0.00
Firm Age	2,461	14.15***	7.00	18.31
Business Segments	2,461	2.06***	1.00	1.54

TABLE 11: Effect of Outside Directors' Busyness on Firm Performance

This table presents the results of multivariate analysis of firm performance and busy outside directors using fixed effect regression. Firm performance is measured using Tobin's Q and ROA. Models (1) and (2) use Tobin's Q as dependent variable and Models (3) and (4) use ROA as the dependent variable. Tobin's Q is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. ROA is calculated as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets, divided by the average of the beginning and year end book value of total assets. The regressions use Busy Board Indicator and Busy Director Percent as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) ROA	(4) ROA
Busy Board Indicator	-0.041*** (0.001)		-0.033** (0.030)	
Busy Director Percent		-0.151*** (0.006)		-0.110*** (0.004)
CEO Directorship Log	-0.114 (0.466)	-0.117 (0.384)	-0.107*** (0.001)	-0.137*** (0.001)
Industry Director Indicator	0.036** (0.032)	0.050*** (0.005)	0.032 (0.297)	0.033 (0.186)
Director Ownership Percent	0.114*** (0.000)	0.104*** (0.000)	0.100** (0.036)	0.120** (0.039)
Board Interlock Indicator	-0.004** (0.020)	-0.002** (0.025)	-0.001** (0.043)	-0.001** (0.014)
CEO Ownership Percent	0.005*** (0.004)	0.005*** (0.004)	0.009 (0.362)	0.011 (0.360)
Board Size Log	-0.372*** (0.000)	-0.374*** (0.000)	-0.227*** (0.000)	-0.227*** (0.000)
Independent Director Percent	0.140*** (0.009)	0.120*** (0.005)	0.091** (0.012)	0.110** (0.010)
Return on Assets	1.783*** (0.000)	1.783*** (0.000)		
Return on Sales			2.016*** (0.000)	2.016*** (0.000)
Firm Size	0.435*** (0.000)	0.335*** (0.000)	0.454*** (0.000)	0.344*** (0.000)
Firm Age	-0.006*** (0.000)	-0.006*** (0.000)	-0.001** (0.054)	-0.001** (0.061)
Growth Opportunities	0.073*** (0.003)	0.083*** (0.003)	0.090*** (0.001)	0.091*** (0.001)
Business Segments	-0.038*** (0.000)	-0.038*** (0.000)	-0.027*** (0.000)	-0.037*** (0.000)
N	43034	43034	43034	43034
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

TABLE 12: Role of Certified Inside Director (CID) in Mitigating Busyness Effect

This table presents the results of multivariate analysis of the impact of certified inside directors (CIDs) in mitigating the negative effects of directors' busyness on firm performance. Busyness measures are interacted with CID Board Indicator. Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board and zero otherwise. The regressions use Busy Board Indicator (Models (1) and (3)) and Busy Director Percent (Model (2) and (4)) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable which equals one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Firm performance, the dependent variable, is measured using Tobin's Q (Models (1) and (2)) and ROA (Models (3) and (4)). Tobin's Q is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. ROA is calculated as the sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets, divided by the average of the beginning and year end book value of total assets. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) ROA	(4) ROA
Busy Board Indicator	-0.053*** (0.003)		-0.054*** (0.001)	
Busy Board-CID Interaction	0.071*** (0.001)		0.077*** (0.000)	
Busy Director Percent		-0.041** (0.016)		-0.040** (0.017)
Percent Busy-CID Interaction		0.075*** (0.003)		0.070*** (0.002)
CID Board Indicator	0.070*** (0.003)	0.076*** (0.001)	0.070*** (0.002)	0.071*** (0.009)
CEO Directorship Log	-0.114 (0.475)	-0.115 (0.422)	-0.107* (0.071)	-0.107* (0.069)
Industry Director Indicator	0.035** (0.039)	0.050*** (0.005)	0.042 (0.293)	0.043 (0.189)
Director Ownership Percent	0.104*** (0.000)	0.104*** (0.000)	0.100*** (0.001)	0.100*** (0.002)
Board Interlock Indicator	-0.003** (0.023)	-0.003** (0.029)	-0.001*** (0.002)	-0.001*** (0.007)
CEO Ownership Percent	0.005*** (0.005)	0.005*** (0.004)	0.007 (0.367)	0.008 (0.367)
Board Size Log	-0.381*** (0.000)	-0.384*** (0.000)	-0.227*** (0.000)	-0.231*** (0.000)
Independent Director Percent	0.110*** (0.00)	0.100*** (0.009)	0.090** (0.012)	0.100*** (0.010)
Return on Assets	1.782*** (0.000)	1.782*** (0.000)		
Return on Sales			1.916*** (0.000)	2.016*** (0.000)
Firm Size	0.436*** (0.000)	0.435 (0.000)	0.354*** (0.000)	0.354*** (0.000)
Firm Age	-0.006*** (0.000)	-0.006*** (0.000)	-0.000* (0.052)	-0.001* (0.060)
Growth Opportunities	0.073*** (0.003)	0.073*** (0.003)	0.069*** (0.001)	0.070*** (0.001)

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Table 12 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) ROA	(4) ROA
Business Segments	-0.038***	-0.038***	-0.037***	-0.039***
	(0.000)	(0.000)	(0.000)	(0.000)
N	43034	43034	43034	43034
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

TABLE 13: Impact of Certified Inside Director (CID) in High Monitoring Cost Firms

This table presents the results of multivariate analysis of the impact of certified inside directors (CIDs) on directors' busyness effect in high monitoring cost firms. Monitoring cost is measured by a factor score from a principal-component analysis using stock return volatility, R&D Intensity, proportion of inside ownership and the ratio of intangible assets to total assets. High (Low) Monitoring Cost Indicator equals one if a firm is in the top (bottom) quartile of the monitoring cost factor score and zero otherwise. The Indicator variable Busy-CID equals one if majority of the outside directors are busy (i.e., hold three or more directorships) and at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm (i.e. firm has both Busy Board and CID Board). The Indicator variable Busy-NOCID equals one if a majority of the outside directors are busy, but a certified inside director (CID) is not present on the board (i.e., firm has a Busy Board, but does not have a CID Board). Busy Board refers to the firms where a majority of the outside directors hold three or more total directorships. CID Board refers to the firms where at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm. Tobin's Q is the dependent variables it is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q
Busy-CID & High Monitoring Cost	0.058*** (0.004)	0.081*** (0.004)
Busy-CID & Low Monitoring Cost	0.013** (0.049)	0.033** (0.017)
Busy-NOCID & High Monitoring Cost		-0.147*** (0.010)
Busy-NOCID & Low Monitoring Cost		-0.126 (0.117)
Busy Board with CID (Busy-CID)	0.028** (0.033)	0.049** (0.020)
Busy Board without CID (Busy-NOCID)	-0.098** (0.024)	-0.109** (0.032)
High Monitoring Cost	-0.007 (0.665)	-0.013 (0.447)
Low Monitoring Cost	0.006 (0.752)	0.002 (0.905)
CEO Directorship Log	-0.014 (0.449)	-0.015 (0.418)
Industry Director Indicator	0.036** (0.032)	0.036** (0.034)
Director Ownership Percent	0.004*** (0.000)	0.004*** (0.000)
Board Interlock Indicator	-0.064** (0.019)	-0.064** (0.020)
CEO Ownership Percent	0.005*** (0.004)	0.005*** (0.004)
Board Size Log	-0.373*** (0.000)	-0.372*** (0.000)
Independent Director Percent	0.091 (0.401)	0.090 (0.394)
Return on Assets	0.782*** (0.000)	0.782*** (0.000)

Table 13 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q
Firm Size	0.136***	0.136***
	(0.000)	(0.000)
Firm Age	0.006***	0.006***
	(0.000)	(0.000)
Growth Opportunities	0.003***	0.003***
	(0.003)	(0.003)
Business Segments	-0.038***	-0.038***
	(0.000)	(0.000)
N	43034	43034
Firm fixed-effects	Yes	Yes
Industry fixed-effects	Yes	Yes
Year fixed-effects	Yes	Yes

TABLE 14: Impact of Certified Inside Director (CID) in High Complexity Firms

This table presents the results of multivariate analysis of the impact of certified inside directors (CIDs) on directors' busyness effect in high complexity firms. Firm complexity is measured by a factor score from a principal-component analysis using firm size, firm age, leverage and number of business segments. High (Low) Complexity Indicator equals one if a firm is in the top (bottom) quartile of the complexity factor score, and zero otherwise. The Indicator variable Busy-CID equals one if a majority of the outside directors are busy (i.e., hold three or more directorships) and at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm (i.e. firm has both Busy Board and CID Board). The Indicator variable Busy-NOCID equals one if majority of the outside directors are busy, but a certified inside director (CID) is not present on the board (i.e., firm has a Busy Board, but does not have a CID Board). Busy Board refers to the firms where a majority of the outside directors hold three or more total directorships. CID Board refers to the firms where at least one of the non-CEO inside directors holds a directorship at an unaffiliated firm. Tobin's Q is the dependent variables it is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q
Busy-CID & High Complexity	0.109*** (0.005)	0.118*** (0.004)
Busy-CID & Low Complexity	0.096*** (0.001)	0.098*** (0.003)
Busy-NOCID & High Complexity		-0.107*** (0.003)
Busy-NOCID & Low Complexity		-0.054* (0.058)
Busy Board with CID (Busy-CID)	0.081*** (0.009)	0.082*** (0.006)
Busy Board without CID (Busy-NOCID)	-0.010*** (0.002)	-0.006** (0.004)
High Complexity	-0.057*** (0.007)	-0.063*** (0.003)
Low Complexity	0.004 (0.784)	0.001 (0.966)
CEO Directorship Log	-0.015 (0.420)	-0.015 (0.447)
Industry Director Indicator	0.037** (0.028)	0.038** (0.025)
Director Ownership Percent	0.004*** (0.000)	0.004*** (0.000)
Board Interlock Indicator	-0.063** (0.022)	-0.063** (0.022)
CEO Ownership Percent	0.005*** (0.004)	0.005*** (0.004)
Board Size Log	-0.371*** (0.000)	-0.374*** (0.000)
Independent Director Percent	0.089** (0.028)	0.082** (0.090)
Return on Assets	0.783*** (0.000)	0.782*** (0.000)

Table 14 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q
Firm Size	0.134***	0.134***
	(0.000)	(0.000)
Firm Age	-0.006***	-0.006***
	(0.001)	(0.001)
Growth Opportunities	0.003***	0.003***
	(0.003)	(0.003)
Business Segments	-0.032***	-0.032***
	(0.000)	(0.000)
N	43034	43034
Firm fixed-effects	Yes	Yes
Industry fixed-effects	Yes	Yes
Year fixed-effects	Yes	Yes

TABLE 15: Impact of CIDs and Outside Directors' Busyness on Cash Holding

This table presents the results of fixed effect multivariate analysis of (a) the effect of outside directors' busyness on cash holding (Models (1) and (2)) and (b) the impact of certified inside directors (CIDs) on the association between cash holdings and outside directors' busyness (Models (3) and (4)). Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board and zero otherwise. The regressions use Busy Board Indicator (Models (1) and (3)) and Busy Director Percent (Models (2) and (4)) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Dependent Variable is Cash Holdings, measured as cash and cash equivalent scaled by total sales. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) Cash	(2) Cash	(3) Cash	(4) Cash
Busy Board Indicator	-0.014***		-0.015***	
	(0.006)		(0.003)	
Busy Director Percent		-0.018***		-0.019***
		(0.003)		(0.003)
Busy Board-CID Interaction			0.029***	
			(0.006)	
Percent Busy-CID Interaction				0.033***
				(0.008)
CID Board Indicator			0.011**	0.015**
			(0.025)	(0.033)
CEO Directorship Log	-0.136	-0.160	-0.144	-0.150
	(0.745)	(0.701)	(0.731)	(0.719)
Industry Director Indicator	0.048	0.012	0.026	0.007
	(0.689)	(0.976)	(0.733)	(0.986)
Director Ownership Percent	0.020	0.020	0.020	0.019
	(0.369)	(0.371)	(0.368)	(0.391)
Board Interlock Indicator	-0.061	-0.036	-0.091	-0.065
	(0.547)	(0.576)	(0.515)	(0.543)
CEO Ownership Percent	0.006	0.006	0.008	0.010
	(0.872)	(0.868)	(0.832)	(0.790)
Board Size Log	-0.477***	-0.498***	-0.498***	-0.442***
	(0.000)	(0.000)	(0.000)	(0.000)
Independent Director Percent	0.022**	0.022**	0.024**	0.024**
	(0.028)	(0.028)	(0.017)	(0.017)
Return on Assets	0.030***	0.030***	0.022***	0.075***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm Size	0.005***	0.002***	0.005***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)
Firm Age	-0.003	-0.003	-0.003	-0.004
	(0.546)	(0.541)	(0.547)	(0.519)
Growth Opportunities	0.077***	0.076***	0.077***	0.077***
	(0.000)	(0.000)	(0.000)	(0.000)
Business Segments	-0.014	-0.015	-0.011	-0.019

Table 15 Continued

	(1) Cash (0.394)	(2) Cash (0.387)	(3) Cash (0.404)	(4) Cash (0.370)
CEO Duality	-0.004 (0.455)	-0.005 (0.421)	-0.009 (0.398)	-0.006 (0.387)
R&D Intensity	3.673*** (0.000)	3.684*** (0.000)	3.759*** (0.000)	3.851*** (0.000)
CAPEX Intensity	3.989*** (0.000)	3.989*** (0.000)	3.997*** (0.000)	3.973*** (0.000)
Stock Volatility	5.460*** (0.001)	5.431*** (0.001)	5.404*** (0.001)	5.287*** (0.001)
Leverage	-1.067*** (0.006)	-1.089*** (0.006)	-1.048*** (0.005)	-1.078*** (0.001)
N	43034	43034	43034	43034
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

TABLE 16: Impact of CIDs and Outside Directors' on Earning Restatements

This table presents the results of probit regression analysis of (a) the effect of outside directors' busyness on the likelihood of earnings misrepresentation (Models (1) and (2)) and (b) the impact of certified inside directors (CIDs) on the association between the likelihood of earnings misrepresentation and outside directors' busyness (Models (3) and (4)). Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board and zero otherwise. The regressions use Busy Board Indicator (Models (1) and (3)) and Busy Director Percent (Models (2) and (4)) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Dependent variable Restate is an indicator variable for earnings restatement that takes value of 1 if the firm issued announcement for earning restatement covering any quarter of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) Restate	(2) Restate	(3) Restate	(4) Restate
Busy Board Indicator	0.055*** (0.006)		0.053*** (0.003)	
Busy Director Percent		0.042*** (0.007)		0.042*** (0.004)
Busy Board-CID Interaction			-0.055** (0.039)	
Percent Busy-CID Interaction				-0.050** (0.018)
CID Board Indicator			-0.117** (0.049)	-0.116** (0.047)
CEO Directorship Log	-0.032 (0.465)	-0.036 (0.404)	-0.032 (0.459)	-0.037 (0.402)
Industry Director Indicator	0.024 (0.513)	0.004 (0.925)	0.024 (0.514)	0.003 (0.934)
Director Ownership Percent	0.002 (0.385)	0.002 (0.387)	0.002 (0.384)	0.002 (0.388)
Board Interlock Indicator	-0.146** (0.029)	-0.142** (0.034)	-0.146** (0.029)	-0.142** (0.034)
CEO Ownership Percent	0.003 (0.309)	0.003 (0.319)	0.003 (0.309)	0.003 (0.320)
Board Size Log	-0.086 (0.164)	-0.080 (0.194)	-0.085 (0.169)	-0.080 (0.199)
Independent Director Percent	0.002* (0.057)	0.002* (0.076)	0.002* (0.056)	0.002* (0.076)
Market-to-Book	0.014 (0.227)	0.014 (0.226)	0.014 (0.230)	0.014 (0.226)
Firm Size	0.063*** (0.000)	0.065*** (0.000)	0.063*** (0.000)	0.065*** (0.000)
Operating CF	-0.194** (0.039)	-0.201** (0.032)	-0.194** (0.039)	-0.201** (0.032)
CEO Age	-0.001 (0.669)	-0.001 (0.632)	-0.001 (0.670)	-0.001 (0.633)

Table 16 Continued

	(1) Restate	(2) Restate	(3) Restate	(4) Restate
Post-SOX	-0.180***	-0.181***	-0.169***	-0.169***
	(0.000)	(0.000)	(0.000)	(0.000)
R&D Intensity	-0.036	-0.026	-0.035	-0.025
	(0.883)	(0.915)	(0.885)	(0.918)
N	43034	43034	43034	43034
Firm fixed-effects	No	No	No	No
Industry fixed-effects	No	No	No	No
Year fixed-effects	No	No	No	No

TABLE 17: Role of Certified Inside Director (CID) in Mitigating Busyness Effect Using Lagged Values of Busyness and CID Measures

This table presents the results of multivariate analysis of the impact of certified inside directors (CIDs) in mitigating the negative effects of directors' busyness on firm performance. All busyness and CID measures are lagged by one period to address endogeneity concerns. Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board and zero otherwise. The regressions use Busy Board Indicator (Models (1) and (3)) and Busy Director Percent (Models (2) and (4)) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Firm performance, the dependent variable, is measured using Tobin's Q, which is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
Busy Board Indicator (Lag)	-0.033*** (0.005)		-0.029*** (0.000)	
Busy Director Percent (Lag)		-0.081*** (0.009)		-0.081*** (0.002)
Busy Board-CID Interaction (Lag)			0.048*** (0.004)	
Percent Busy-CID Interaction (Lag)				0.101*** (0.005)
CID Board Indicator (Lag)			0.054** (0.021)	0.044** (0.022)
CEO Directorship Log	-0.011 (0.586)	-0.012 (0.553)	-0.010 (0.601)	-0.011 (0.573)
Industry Director Indicator	0.056*** (0.002)	0.059*** (0.001)	0.055*** (0.002)	0.058*** (0.001)
Director Ownership Percent	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)	0.004*** (0.000)
Board Interlock Indicator	-0.068** (0.016)	-0.068** (0.017)	-0.068** (0.017)	-0.067** (0.018)
CEO Ownership Percent	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.006*** (0.001)
Board Size Log	-0.333*** (0.000)	-0.333*** (0.000)	-0.338*** (0.000)	-0.338*** (0.000)
Independent Director Percent	0.090 (0.758)	0.090 (0.789)	0.081 (0.847)	0.081 (0.883)
Return on Assets	0.840*** (0.000)	0.840*** (0.000)	0.840*** (0.000)	0.840*** (0.000)
Firm Size	0.127*** (0.000)	0.127*** (0.000)	0.128*** (0.000)	0.128*** (0.000)
Firm Age	-0.006*** (0.001)	-0.006*** (0.001)	-0.006*** (0.001)	-0.006*** (0.002)
Growth Opportunities	0.003** (0.010)	0.003** (0.010)	0.003** (0.010)	0.003** (0.010)
Business Segments	-0.048*** (0.000)	-0.048*** (0.000)	-0.048*** (0.000)	-0.048*** (0.000)

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Table 17 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
N	36831	36831	36831	36831
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

TABLE 18: Role of Certified Inside Director (CID) in Mitigating Busyness Effect Using Two-Stage Least Squares (2SLS)

This table presents results of the two-stage least squares (2SLS) regression of the impact of certified inside directors (CIDs) in mitigating the negative effects of directors' busyness on firm performance. The number of public companies headquartered within 100 miles radius of the firm and the number of outside directors who are over 60 years of age is used as the instrumental variables in the first-stage regression. Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board and zero otherwise. The regressions use Busy Board Indicator (Models (1) and (3)) and Busy Director Percent (Models (2) and (4)) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Firm performance, the dependent variable, is measured using Tobin's Q, which is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
Busy Board Indicator	-0.065*** (0.002)		-0.074*** (0.009)	
Busy Director Percent		-0.035*** (0.000)		-0.053*** (0.006)
Busy Board-CID Interaction			0.084*** (0.007)	
Percent Busy-CID Interaction				0.064*** (0.004)
CID Board Indicator			0.144** (0.039)	0.159** (0.050)
CEO Directorship Log	-0.155*** (0.002)	-0.106*** (0.000)	-0.146** (0.013)	-0.118** (0.029)
Industry Director Indicator	0.046*** (0.001)	0.056*** (0.000)	0.084*** (0.009)	0.0527*** (0.003)
Director Ownership Percent	0.005*** (0.001)	0.004*** (0.000)	0.005 (0.212)	0.007 (0.640)
Board Interlock Indicator	-0.012 (0.777)	-0.028 (0.431)	-0.023** (0.049)	-0.024** (0.043)
CEO Ownership Percent	0.005** (0.024)	0.006*** (0.002)	0.012 (0.291)	0.129 (0.569)
Board Size Log	-0.686*** (0.000)	-0.411*** (0.000)	-0.280*** (0.004)	-0.162*** (0.007)
Independent Director Percent	0.005*** (0.001)	0.005*** (0.004)	0.002 (0.769)	0.074 (0.545)
Return on Assets	0.742*** (0.000)	0.789*** (0.000)	0.620*** (0.001)	1.159*** (0.008)
Firm Size	0.100*** (0.000)	0.114*** (0.000)	0.112** (0.027)	0.139** (0.039)
Firm Age	-0.012*** (0.000)	-0.007*** (0.000)	-0.025** (0.012)	-0.014** (0.036)
Growth Opportunities	0.003** (0.016)	0.003** (0.020)	0.003 (0.366)	0.002 (0.988)
Business Segments	-0.052*** (0.000)	-0.043*** (0.000)	-0.097*** (0.003)	-0.087*** (0.006)

Table 18 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
N	43034	43034	43034	43034
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

TABLE 19: Role of Certified Inside Director (CID) in Mitigating Busyness Effect Using GMM Estimation

This table presents results of the GMM Estimation of the impact of certified inside directors (CIDs) in mitigating the negative effects of directors' busyness on firm performance. One period lag and two period lag of Tobin's Q and all control variables from the busyness-performance regression is used as instruments. Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board, and zero otherwise. The regressions use Busy Board Indicator (Models (1) and (3)) and Busy Director Percent (Models (2) and (4)) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Firm performance, the dependent variable, is measured using Tobin's Q, which is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
Busy Board Indicator	-0.068*** (0.006)		-0.052*** (0.008)	
Busy Director Percent		-0.033*** (0.008)		-0.033** (0.012)
Busy Board-CID Interaction			0.063*** (0.008)	
Percent Busy-CID Interaction				0.042*** (0.005)
CID Board Indicator			0.107** (0.019)	0.065*** (0.018)
CEO Directorship Log	-0.113* (0.067)	-0.116* (0.064)	-0.098* (0.100)	-0.105* (0.091)
Industry Director Indicator	0.039 (0.473)	0.000 (0.998)	0.031 (0.572)	0.004 (0.946)
Director Ownership Percent	0.009** (0.022)	0.009** (0.017)	0.009** (0.018)	0.010** (0.013)
Board Interlock Indicator	-0.078 (0.335)	-0.086 (0.287)	-0.054 (0.504)	-0.067 (0.406)
CEO Ownership Percent	0.001 (0.908)	0.001 (0.869)	0.000 (0.985)	0.001 (0.875)
Board Size Log	-0.160 (0.266)	-0.188 (0.195)	-0.110 (0.439)	-0.133 (0.354)
Independent Director Percent	0.002 (0.331)	0.003 (0.275)	0.002 (0.332)	0.003 (0.290)
Return on Assets	0.161 (0.146)	0.159 (0.153)	0.159 (0.151)	0.151 (0.172)
Firm Size	0.360*** (0.000)	0.381*** (0.000)	0.355*** (0.000)	0.374*** (0.000)
Firm Age	-0.002*** (0.000)	-0.004*** (0.000)	-0.009*** (0.000)	-0.001*** (0.000)
Growth Opportunities	0.001 (0.844)	0.001 (0.857)	0.001 (0.831)	0.001 (0.842)
Business Segments	-0.078** (0.030)	-0.077** (0.034)	-0.067* (0.060)	-0.067* (0.061)

Table 19 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
Tobin's Q 1YR Lag	0.343***	0.348***	0.333***	0.341***
	(0.000)	(0.000)	(0.000)	(0.000)
Tobin's Q 2YR Lag	0.761***	0.773***	0.750***	0.761***
	(0.000)	(0.000)	(0.000)	(0.000)
N	32333	32333	32333	32333
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

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TABLE 20: Impact of CIDs and Outside Directors' Busyness on Market Value of Cash

This table presents the results of fixed effect multivariate analysis of the impact of certified inside directors (CIDs) on the association between market value of cash and outside directors' busyness. The regression is estimated using Fama-MacBeth methodology, where cross sectional regressions are estimated for every year. The reported coefficients and standard errors are the average of the cross-sectional regression coefficients and standard errors. Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board, and zero otherwise. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. The Indicator variable Busy-CID equals one if a firm has both Busy Board and CID Board, and zero otherwise. The Indicator variable Busy-NOCID equals one if a firm has a Busy Board, but does not have a CID Board, and zero otherwise. The Indicator variable NOBUSY-CID equals one if a firm has a CID Board but does not have a Busy Board, and zero otherwise. Dependent Variable is Market Capitalization (market value of the firm), which is calculated as the sum of the market value of equity and the book values of short-term debt and long-term debt. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) Market Cap
BUSY-CID & Cash Interaction	1.016***
	(0.008)
BUSY-NOCID & Cash Interaction	-0.857***
	(0.001)
NOBUSY-CID & Cash Interaction	1.146***
	(0.006)
Busy Board with CID	0.017***
	(0.009)
Busy Board without CID	-0.006***
	(0.001)
Non-Busy Board with CID	0.004**
	(0.017)
Cash holding level at t	1.274***
	(0.004)
Earnings level at t	8.265**
	(0.039)
Earnings change from t-1 to t	-10.141
	(0.406)
Earnings change from t to t+1	5.089***
	(0.008)
R&D Expense level at t	10.666***
	(0.001)
R&D Expense change from t-1 to t	-4.563
	(0.338)
R&D Expense change from t to t+1	2.967**
	(0.018)
Interest Expense level at t	-6.758**
	(0.026)
Interest Expense change from t-1 to t	4.237
	(0.327)
Interest Expense change from t to t+1	-3.717**
	(0.034)
Dividends Payment level at t	7.828***
	(0.001)

Table 20 Continued

	(1) Market Cap
Dividends Payment change from t-1 to t	8.132**
	(0.049)
Dividends Payment change from t to t+1	5.341
	(0.275)
Net Assets change from t-1 to t	0.010***
	(0.003)
Net Assets change from t to t+1	0.016***
	(0.005)
Market Cap change from t to t+1	-0.420***
	(0.003)
N	40697
Firm fixed-effects	No
Industry fixe-effects	No
Year fixed-effects	No

TABLE 21: Role of NON-CIDs in Mitigating Busyness Effect

This table presents the results of multivariate analysis of the impact of Non-CIDs in mitigating the negative effects of directors' busyness on firm performance. Non-CIDs are non-CEO inside directors who do not hold any directorships at an unaffiliated firm. NONCID Board Indicator takes a value of one if a Non-CID is present on the board and zero otherwise. The regressions use Busy Board Indicator (Model 1) and Busy Director Percent (Model 2) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Firm performance, the dependent variable, is measured using Tobin's Q, which is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q
Busy Board Indicator	-0.041*** (0.003)	
Busy Board-NONCID Interaction	-0.037 (0.358)	
Busy Director Percent		-0.031** (0.016)
Percent Busy-NONCID Interaction		-0.021 (0.238)
NONCID Board Indicator	-0.008 (0.317)	-0.021 (0.136)
CEO Directorship Log	-0.014 (0.449)	-0.017 (0.365)
Industry Director Indicator	0.037** (0.029)	0.051*** (0.004)
Director Ownership Percent	0.104*** (0.000)	0.104*** (0.000)
Board Interlock Indicator	-0.064** (0.020)	-0.062** (0.025)
CEO Ownership Percent	0.005*** (0.004)	0.005*** (0.004)
Board Size Log	-0.384*** (0.000)	-0.387*** (0.000)
Independent Director Percent	0.090** (0.048)	0.090** (0.045)
Return on Assets	0.783*** (0.000)	0.783*** (0.000)
Firm Size	0.136*** (0.000)	0.135*** (0.000)
Firm Age	-0.006*** (0.000)	-0.006*** (0.000)
Growth Opportunities	0.003*** (0.003)	0.003*** (0.003)
Business Segments	-0.038*** (0.000)	-0.038*** (0.000)

Table 21 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q
N	43034	43034
Firm fixed-effects	Yes	Yes
Industry fixed-effects	Yes	Yes
Year fixed-effects	Yes	Yes

TABLE 22: Role of Certified Inside Director (CID) in Mitigating Busyness Effect during Pre-SOX Period

This table presents the results of multivariate analysis of (a) the effect of outside directors' busyness on firm performance during pre-SOX period (Models (1) and (2)) and (b) the impact of certified inside directors (CIDs) in mitigating the negative effects of directors' busyness on firm performance during Pre-SOX Period (Models (3) and (4)). Pre-SOX period observations refers to the firm-year observations that occur in fiscal year prior to 2001. Busyness measures are interacted with CID Board Indicator. Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board and zero otherwise. The regressions use Busy Board Indicator (Models (1) and (3)) and Busy Director Percent (Models (2) and (4)) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Firm performance, the dependent variable, is measured using Tobin's Q, which is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
Busy Board Indicator	-0.055*** (0.002)		-0.074*** (0.009)	
Busy Director Percent		-0.061*** (0.008)		-0.063*** (0.004)
Busy Board-CID Interaction			0.106** (0.045)	
Percent Busy-CID Interaction				0.075** (0.034)
CID Board Indicator			0.111** (0.041)	0.116** (0.042)
CEO Directorship Log	-0.036 (0.556)	-0.035 (0.559)	-0.032 (0.592)	-0.031 (0.610)
Industry Director Indicator	0.053 (0.421)	0.057 (0.396)	0.052 (0.427)	0.056 (0.403)
Director Ownership Percent	0.002* (0.075)	0.002* (0.071)	0.002** (0.046)	0.002** (0.050)
Board Interlock Indicator	-0.107 (0.142)	-0.105 (0.148)	-0.107 (0.141)	-0.106 (0.144)
CEO Ownership Percent	0.001 (0.837)	0.001 (0.835)	0.001 (0.834)	0.002 (0.775)
Board Size Log	-0.085*** (0.003)	-0.083*** (0.006)	-0.101** (0.022)	-0.100** (0.023)
Independent Director Percent	0.001* (0.072)	0.001* (0.079)	0.001* (0.056)	0.001* (0.077)
Return on Assets	0.957*** (0.000)	0.958*** (0.000)	0.955*** (0.000)	0.951*** (0.000)
Firm Size	0.047*** (0.003)	0.047*** (0.004)	0.046** (0.015)	0.046** (0.047)
Firm Age	-0.006 (0.712)	-0.006 (0.706)	-0.006 (0.712)	-0.006 (0.711)
Growth Opportunities	0.185*** (0.000)	0.185*** (0.000)	0.185*** (0.000)	0.186*** (0.000)
Business Segments	-0.019 (0.236)	-0.019 (0.235)	-0.020 (0.210)	-0.020 (0.208)

Table 22 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
N	5636	5636	5636	5636
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

TABLE 23: Role of Certified Inside Director (CID) in Mitigating Busyness Effect during Post-SOX Period

This table presents the results of multivariate analysis of (a) the effect of outside directors' busyness on firm performance during Post-SOX period (Models (1) and (2)) and (b) the impact of certified inside directors (CIDs) in mitigating the negative effects of directors' busyness on firm performance during Post-SOX Period (Models (3) and (4)). Post-SOX period observations refers to the firm-year observations that occur in fiscal year 2001 or later. Busyness measures are interacted with CID Board Indicator. Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board and zero otherwise. The regressions use Busy Board Indicator (Models (1) and (3)) and Busy Director Percent (Models (2) and (4)) as the busyness measures. Busy Board Indicator (1/0) is an indicator variable equal to one if 50% or more of the outside directors in the board hold three or more directorships. Busy Director Percent is the percentage of outside directors that hold three or more directorships. Firm performance, the dependent variable, is measured using Tobin's Q, which is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
Busy Board Indicator	-0.032** (0.043)		-0.034** (0.034)	
Busy Director Percent		-0.031** (0.014)		-0.031** (0.029)
Busy Board-CID Interaction			0.110*** (0.001)	
Percent Busy-CID Interaction				0.091*** (0.007)
CID Board Indicator			0.152*** (0.001)	0.160*** (0.003)
CEO Directorship Log	-0.001 (0.958)	-0.003 (0.873)	-0.002 (0.923)	-0.004 (0.832)
Industry Director Indicator	0.043** (0.011)	0.053*** (0.003)	0.042** (0.013)	0.052*** (0.003)
Director Ownership Percent	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.000)
Board Interlock Indicator	-0.019 (0.510)	-0.018 (0.540)	-0.019 (0.530)	-0.017 (0.561)
CEO Ownership Percent	0.004** (0.018)	0.004** (0.017)	0.004** (0.020)	0.004** (0.020)
Board Size Log	-0.287*** (0.000)	-0.290*** (0.000)	-0.292*** (0.000)	-0.295*** (0.000)
Independent Director Percent	0.096*** (0.001)	0.095*** (0.008)	0.093*** (0.007)	0.093*** (0.002)
Return on Assets	0.542*** (0.000)	0.542*** (0.000)	0.542*** (0.000)	0.542*** (0.000)
Firm Size	0.116*** (0.000)	0.116*** (0.000)	0.117*** (0.000)	0.116*** (0.000)
Firm Age	-0.004* (0.074)	-0.004* (0.063)	-0.004* (0.080)	-0.004* (0.068)
Growth Opportunities	0.003*** (0.005)	0.003*** (0.005)	0.003*** (0.005)	0.003*** (0.005)
Business Segments	-0.038*** (0.000)	-0.038*** (0.000)	-0.038*** (0.000)	-0.038*** (0.000)

Table 23 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
N	37398	37398	37398	37398
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

TABLE 24: Role of Certified Inside Director (CID) in Mitigating Busyness Effect Using Alternate Busyness Measures

This table presents the results of multivariate analysis of (a) the effect of outside directors' busyness on firm performance during (Models (1) and (3)) and (b) the impact of certified inside directors (CIDs) in mitigating the negative effects of directors' busyness on firm performance (Models (3) and (4)) using alternate busyness measures. The regressions use average Director Focus (Models (1) and (2)) and average Director Time Committed (Models (3) and (4)) as the alternate busyness measures. Director focus of a director in a particular firm is computed as the fraction of the market capital of the firm relative to the total market capitalization of the firms in the director's directorship portfolio. The average director focus in a firm is then calculated as the average of the directors' focus of all outside directors in a firm. Director time committed for each director is computed by multiplying number of directorship with the average director time commitment required for a particular year (as reported by National Association of Corporate Directors). Average Director Time Committed is then calculated the average of the time committed by all the outside directors. Busyness measures are interacted with CID Board Indicator. Certified inside directors (CIDs) are non-CEO inside directors who hold directorships at an unaffiliated firm. CID Board Indicator takes a value of one if a certified inside director is present on the board, and zero otherwise. Firm performance, the dependent variable, is measured using Tobin's Q, which is calculated as the market value of the firm's equity at the end of the year plus the difference between the book value of the firm's assets and the book value of the firm's equity at the end of the year, divided by the book value of the firm's assets at the end of the year. The definitions of all other variables are self-explanatory or are described in the main text and in Appendix A (variable definitions). Firm, industry and year fixed effects are employed for all regression models. I report p-values in parentheses. The p-values are based on robust standard errors adjusted for heteroscedasticity and clustering at the firm level. *, ** and *** marks statistical significance at the 10% level, 5% level and 1% level, respectively.

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
Director Focus	0.123*** (0.000)	0.091*** (0.000)		
Director Time Committed			-0.006** (0.014)	-0.018** (0.018)
Dir Focus-CID Interaction		0.148*** (0.000)		
Dir Time-CID Interaction				0.050*** (0.001)
CID Board Indicator		0.036*** (0.006)		0.085** (0.017)
CEO Directorship Log	-0.010 (0.588)	-0.010 (0.594)	-0.007 (0.731)	-0.008 (0.690)
Industry Director Indicator	0.075*** (0.000)	0.074*** (0.000)	0.050*** (0.004)	0.050*** (0.004)
Director Ownership Percent	0.004*** (0.000)	0.004*** (0.000)	0.003*** (0.005)	0.003*** (0.005)
Board Interlock Indicator	-0.044 (0.107)	-0.043 (0.120)	-0.018 (0.562)	-0.017 (0.570)
CEO Ownership Percent	0.004*** (0.007)	0.004*** (0.009)	0.003 (0.161)	0.003 (0.173)
Board Size Log	-0.386*** (0.000)	-0.396*** (0.000)	-0.277*** (0.000)	-0.281*** (0.000)
Independent Director Percent	0.048** (0.018)	0.035** (0.013)	0.046** (0.044)	0.036** (0.043)
Return on Assets	0.758*** (0.000)	0.758*** (0.000)	0.501*** (0.000)	0.502*** (0.000)
Firm Size	0.137*** (0.000)	0.138*** (0.000)	0.100*** (0.000)	0.100*** (0.000)
Firm Age	-0.004** (0.013)	-0.004** (0.014)	-0.002 (0.333)	-0.002 (0.347)
Growth Opportunities	0.003*** (0.003)	0.003*** (0.003)	0.002*** (0.010)	0.002*** (0.010)
Business Segments	-0.037*** (0.000)	-0.037*** (0.000)	-0.038*** (0.000)	-0.038*** (0.000)

Table 24 Continued

	(1) TOBIN'S Q	(2) TOBIN'S Q	(3) TOBIN'S Q	(4) TOBIN'S Q
N	42948	42948	35541	35541
Firm fixed-effects	Yes	Yes	Yes	Yes
Industry fixed-effects	Yes	Yes	Yes	Yes
Year fixed-effects	Yes	Yes	Yes	Yes

APPENDIX A: Variable Definitions

Busyness and CID:

Busy Director: Outside directors who holds 3 or more directorships.

Busy Director (%): Percentage of outside directors who are busy; calculated as (Busy outside directors/Outside Directors) x 100.

Busy Board: Indicator variable that equals one 50% or more of the outside directors are busy, and zero otherwise.

CID: Certified inside directors. Non-CEO Inside directors who hold directorships in unaffiliated firms.

CID Board: Indicator variable that equals one if at least one certified inside director is present on the board, and zero otherwise.

BUSY-CID: Indicator variable that equals one if a firm has both Busy Board and CID Board, and zero otherwise.

BUSY-NOCID: Indicator variable that equals one a firm has a Busy Board but does not have a CID Board, and zero otherwise.

NOBUSY-CID: Indicator variable that equals one if a firm has a CID Board but does not have a Busy Board, and zero otherwise.

Non-CID: Non-CEO Inside directors who do not hold any directorships in unaffiliated firms.

Non-CID Board: Indicator variable that equals one if non-CEO inside directors are present on the board but none of them are certified inside directors, and zero otherwise.

Board Characteristics:

Board Size: Natural log of the number of total directors on the board.

Independent Directors (%): Percentage of outside directors on the board; calculated as the number of outside directors scaled by the board size.

Industry Director: Indicator variable that equals one if there exists at least one outside director on the board who holds at least 50% of his/her directorships in the same Fama-French 48 Industry Class, and zero otherwise.

Board Interlock: Indicator variable that equals one if the firm's CEO sits on the board of any outside director of the firm, and zero otherwise.

CEO Age: Age of the CEO.

CEO Duality: Indicator variable that equals one if the CEO also holds the position of chairman of the board, and zero otherwise.

CEO Directorships: Natural log of the number of directorships held by the CEO.

CEO Ownership: Percentage of common shares held by the CEO.

Director Ownership: Percentage of common shares held by all the directors of the board (excluding the CEO).

Insider Ownership: Percentage of outstanding common shares held by the directors and officers, excluding the CEO.

Firm Characteristics:

Tobin's Q: The market value of firm's equity plus the difference between the book value of the firm's asset and the book value of firm's equity, divided by the book value of firm's assets.

Return on Assets (ROA): Sum of operating income before depreciation plus the decrease in receivables, the decrease in inventory, the increase in current liabilities, and the decrease in other current assets. This sum is then scaled by the average of beginning and ending of year book value of total assets.

Return on Sales (ROS): Ratio of operating income to net sales.

Monitoring Cost: Factor score from Principle Component Analysis Stock return volatility, R&D intensity, Proportion of inside ownership and Ratio of intangible assets to total assets.

High Monitoring Cost: Indicator variable that equals one if a firm is in the top quartile of monitoring cost factor score, and zero otherwise.

Low Monitoring Cost: Indicator variable that equals one if a firm is in the bottom quartile of monitoring cost factor score, and zero otherwise.

Complexity: Factor score from Principle Component Analysis using the firm size, firm age, leverage and number of business segments.

High Complexity: Indicator variable that equals one if a firm is in the top quartile of complexity factor score, and zero otherwise.

Low Complexity: Indicator variable that equals one if a firm is in the bottom quartile of complexity factor score, and zero otherwise.

Firm Size: Natural log of net sales.

Firm Age: Number of years since a firm was first included in the CRSP database.

Growth Opportunity: Depreciation-to-sales ratio; calculated as depreciation expense scaled by net sales.

R&D Intensity: Ratio of R&D Expenditure to total assets.

Capital Expenditure Intensity: Ratio of capital expenditures to sales.

Leverage: Ratio of total debt (short- and long-term debt) to assets.

Operating Margin: Annual operating income standardized by total assets.

Intangible Assets: 1-(Net Property Plant and Equipment/Assets).

Operating Cash Flow: Annual cash flow from operations divided by beginning-of-year total assets.

Stock Return Volatility: Standard deviation of the most recent three years of monthly stock returns from CRSP.

Market-to-Book: Year-end book value of assets plus the market value of equity less book value of equity, standardized by book value of total assets.

Market Capitalization: Sum of the market value of equity and the book values of short-term debt and long-term debt.

Business Segments: Number of business segments based on COMPUSTAT segments data.

Post-SOX Period: Indicator variable that equals one if the firm-year observations are from fiscal year 2001 or later, and zero otherwise.

APPENDIX B: Average Annual Director Time Commitment

Year	Average Director Time Commitment
2002	175.00 hours
2003	180.00 hours
2004	188.00 hours
2005	190.00 hours
2006	210.00 hours
2007	207.40 hours
2008	223.10 hours
2009	222.20 hours
2010	204.50 hours
2011	227.50 hours
2012	218.60 hours
2013	235.90 hours
2014	242.10 hours

Data Source: National Association of Corporate Directors

APPENDIX C: List of Companies with Busy Board and CID Board

No.	GVKEY	Name	Firm-Years
1	008901	RPC INC	11
2	142546	MARINE PRODUCTS CORP	11
3	009411	SARA LEE	7
4	001581	AT&T	5
5	002055	BARRICK GOLD CORP	5
6	002176	BERKSHIRE HATHAWAY	5
7	027928	INTUIT	5
8	005074	ELECTRONIC DATA SYSTEMS	4
9	007435	MINNESOTA MINING & MANUFACTURING	4
10	012252	XOMA CORP	4
11	061839	AMERIGAS PARTNERS	4
12	062465	TLC VISION CORP	4
13	062599	LUCENT TECHNOLOGIES	4
14	127481	MAXYGEN INC	4
15	001468	AMERICAN GREETINGS	3
16	003650	CUMMINS ENGINE	3
17	005071	GENERAL MILLS	3
18	005518	HASBRO	3
19	005680	HOME DEPOT	3
20	006733	LIMITED	3
21	007017	USX-MARATHON	3
22	008479	PEPSICO	3
23	009225	ROLLINS INC	3
24	009815	SONOCO PRODUCTS	3
25	010484	CONTINENTAL AIRLINES INC	3
26	011300	WASHINGTON POST	3
27	013709	ICAHN ENTERPRISES	3
28	013714	VIACOM	3
29	023978	UNITED STATES STEEL	3
30	024810	ENBRIDGE ENERGY PARTNERS	3
31	030137	NEKTAR THERAPEUTICS	3
32	063907	EDUCATION MANAGEMENT CORP	3
33	143892	JAVELIN PHARMACEUTICALS INC	3
34	150838	ENBRIDGE ENERGY MANAGEMENT LLC	3
35	160549	LIBERTY GLOBAL PLC	3
36	186342	LINKEDIN CORP	3
37	187039	ZILLOW INC	3
38	001076	AARON RENTS INC	2
39	001380	AMERADA HESS	2
40	001891	AUTOMATIC DATA PROCESSING	2

No.	GVKEY	Name	Firm-Years
41	002942	CANTEL MEDICAL CORP	2
42	004060	DOW CHEMICAL	2
43	004371	ENGELHARD	2
44	004802	FLORIDA ROCK INDUSTRIES	2
45	004818	FLUOR	2
46	007251	MENTOR GRAPHICS CORPORATION	2
47	008762	PROCTER & GAMBLE	2
48	009325	SL INDUSTRIES INC	2
49	010156	SUN	2
50	010576	TIME WARNER	2
51	010816	USG CORP	2
52	010984	SPRINT	2
53	011636	XEROX	2
54	012141	MICROSOFT	2
55	012142	ORACLE CORP.	2
56	012206	DIRECTV	2
57	013599	CELGENE CORP	2
58	015133	APOGENT TECHNOLOGIES	2
59	024008	MEDIMMUNE	2
60	062290	REVLON INC	2
61	147988	AECOM TECHNOLOGY CORP	2
62	160912	DREAMWORKS ANIMATION SKG INC	2
63	161997	HURON CONSULTING GROUP INC	2
64	170904	TUMI HOLDINGS INC	2
65	001045	AMR CORP	1
66	001078	ABBOTT LABORATORIES	1
67	001608	AMP	1
68	002991	CHEVRON	1
69	003226	COMCAST CORP	1
70	004321	EMERSON ELECTRIC CO.	1
71	004367	EVI WEATHERFORD	1
72	004423	EQUIFAX INC.	1
73	004611	FEDERATED DEPARTMENT STORES	1
74	004839	FORD MOTOR COMPANY	1
75	004932	METROMEDIA INTERNATIONAL GROUP	1
76	004988	GANNETT	1
77	005134	GEORGIA-PACIFIC	1
78	005581	HELMERICH & PAYNE	1
79	005597	HERSHEY FOODS	1
80	006307	SEARS HOLDINGS CORP	1
81	006502	KROGER	1

No.	GVKEY	Name	Firm-Years
82	006730	ELI LILLY AND CO.	1
83	007985	NORTHROP GRUMMAN CORP	1
84	008536	PHELPS DODGE	1
85	009215	ROGERS COMMUNICATIONS INC	1
86	009359	SAFEWAY	1
87	009899	AT&T INC	1
88	010443	TENNECO INC	1
89	010581	TIMKEN	1
90	010726	TRIBUNE	1
91	010795	UAL	1
92	011465	WHIRLPOOL CORP	1
93	011535	WINN-DIXIE STORES	1
94	011566	WOLVERINE WORLD WIDE, INC.	1
95	012053	EMC	1
96	012756	COCA-COLA ENTERPRISES	1
97	013440	LEVEL 3 COMMUNICATIONS INC	1
98	013990	WARNACO GROUP [CL A]	1
99	014285	BENTLEY PHARMACEUTICALS INC	1
100	015426	MORTON INTERNATIONAL	1
101	018432	ENVISION HEALTHCARE HOLDINGS INC	1
102	020570	MDC PARTNERS INC	1
103	023027	EXPONENT, INC.	1
104	024474	TECHNOLOGY SOLUTIONS CO	1
105	024607	MANOR CARE INC	1
106	024870	NEXTEL COMMUNICATIONS	1
107	025056	AOL TIME WARNER	1
108	025124	PRAXAIR	1
109	025331	FRANKLIN COVEY	1
110	025430	FUELCELL ENERGY INC	1
111	026061	IAC INTERACTIVECORP	1
112	028477	FLIR SYSTEMS INC	1
113	028787	PERFORMANCE FOOD GROUP	1
114	028924	BARNES & NOBLE, INC.	1
115	029173	NEWFIELD EXPLORATION	1
116	061445	INTIMATE BRANDS -CL A	1
117	061552	LEXMARK INTERNATIONAL GROUP	1
118	061870	OPEN TEXT CORP	1
119	062634	YAHOO INC	1
120	063800	IMS HEALTH	1
121	064418	DIAMOND MANAGEMENT & TECHNOLOGY CONSULTANTS	1
122	064891	RALPH LAUREN CORP	1

No.	GVKEY	Name	Firm-Years
123	066065	UNITED RENTALS	1
124	108718	VASOGEN INC	1
125	112876	ENTERPRISE PRODUCTS PARTNERS	1
126	115245	THERMA-WAVE INC	1
127	124442	XM SATELLITE RADIO HOLDINGS INC	1
128	125240	WORLD WRESTLING ENTERTAINMENT INC	1
129	125360	SYCAMORE NETWORKS INC	1
130	130762	INTERSIL	1
131	136804	CEPHEID	1
132	137874	SMTC CORPORATION	1
133	138341	CURIS INC	1
134	138346	VIRAGE LOGIC CORP	1
135	143357	ACCENTURE PLC	1
136	144519	ARAMARK CORP	1
137	144520	AMN HEALTHCARE SERVICES INC	1
138	147208	SUNOCO LOGISTICS PARTNERS	1
139	162906	IHS INC	1
140	165675	VIACOM INC	1
141	170297	NORTHERN TIER ENERGY	1
142	170617	FACEBOOK INC	1
143	185584	EXAMWORKS GROUP INC	1
144	187363	GROUPON INC	1
145	187740	M/A-COM TECHNOLOGY SOLUTIONS HOLDINGS INC	1
146	190455	GUIDEWIRE SOFTWARE INC	1
147	194255	VERASTEM INC	1

VITA

Syed M. Kamal was born and raised in Bangladesh. He received a Bachelor of Commence and a Master of Commerce degrees from the University of Dhaka in Bangladesh. After immigrating to the U.S. in 2000, Syed served active duty military service in the United States Army from 2000 to 2003. Syed was granted the U.S. citizenship in 2002 under executive order for wartime military service. He was also awarded the Army Commendation Medal and the National Defense Service Medal for his service in the U.S. Army. After receiving honorable discharge from military service, Syed worked as the Program Coordinator at the University of Texas at Austin from 2003 to 2007. He then attended the State University of New York at Buffalo, where he earned a Master of Arts degree in Economics in 2009. During his doctoral program in Finance at the University of Tennessee in Knoxville, Syed worked as a Research Assistant in the Department of Finance and as a Graduate Assistant for the Chancellor's Council for Diversity and Interculturalism and the Chancellor's Commission for Blacks. Syed also taught Financial Management and Integrated Process Management courses at the University of Tennessee. Syed will complete his Ph.D. in Finance from the University of Tennessee in May 2016. At that time he will join the faculty of the Austin College in Sherman, Texas as the Assistant Professor of Business Administration. His primary areas of research interest are corporate governance and corporate finance.