# THE EFFECTS OF SOCIAL TIES AND INTERNAL BUSYNESS OF INDEPENDENT COMMITTEE MEMBERS ON THE ADVISING ROLE OF BOARDS OF DIRECTORS

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# Abstract

The Effects of Social Ties and Internal Busyness of Independent Committee Members on the Advising Role of Boards of Directors

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The two primary responsibilities of boards of directors are advising and monitoring management. Yet, corporate governance research has predominantly concentrated on agency theory and the monitoring role of the board. Additionally, most studies that examine the work performed by boards' committees do so by examining each committee in isolation, ignoring the interplay between different committees. This dissertation, comprised of two essays, examines the differential association of board characteristics with outcomes that relate to the monitoring as well as the advising role of the board. Additionally, I examine the responsibilities of multiple committees, and the consequences of serving on multiple committees on firm value.

The first essay examines, in a common sample, how social ties (constructed from social networks) between management and independent directors affect the responsibilities of both the compensation and the audit committees. Consistent with Agency Theory, I find that social ties between executives and independent directors that serve on the compensation committee are associated with higher CEO compensation. In contrast, I find that social ties between executives and independent directors that serve on the audit committee are associated with higher quality financial reports and higher quality

internal controls. This association is consistent with the collaborative board model and the theory of friendly boards that predict that social factors, such as trust and friendship, may encourage rather than obstruct board involvement and effectiveness in administering public companies.

The second essay examines the association of the internal busyness of boards with firm value. In my sample period, boards of public companies are required to have three committees (audit, compensation and nomination), composed entirely of independent board members. Complex committee work in the current environment and fewer board members who can serve on these committees could increase the likelihood that independent directors will not be able to effectively perform their committee work as well as allocate sufficient time to their strategic responsibilities. I find that firms with internally busy boards, those in which the majority of independent directors serve on two or more committees, are associated with lower firm value as measured by Tobin's Q.

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# 1 Introduction

This dissertation is composed of two related essays that examine the work of independent board members and their committee responsibilities. I examine two questions that received little attention in academic research. First, since most studies in accounting focus solely on the monitoring role of the board of directors (Cohen et al. 2006), I chose to also examine the advising role of the board with specific emphasis on its committees. Second, the current dissertation examines how certain board members characteristics and internal board structure can have varying affects on the work of different committees. This is in contrast to most previous board committee studies that, concentrated on a single committee, in isolation from other committees and their responsibilities. Additionally, instead of examining how staffing decisions for a specific committee affect firm value, I look at the joint allocation decisions for *all* of the mandatory board committees and their effect on firm value.

## 1.1 The Advising Role of the Board

The dominant governance theory in accounting literature is agency theory (Cohen et al. 2006). This theory describes the conflicts of interests between a principal (stock holders) and an agent (management). This conflict arises because the balance of private information is tilted towards the agent (asymmetric information) and because the goals of the agent are not always aligned with the goals of the principal. One way to manage these conflicting interests is to introduce a board of directors, as a party that acts on behalf of the principal and monitors and enforces the agent to take actions that will best serve the interests of the principal. This theory emphasizes the monitoring role taken

by the board of directors (Fama and Jensen 1983). Numerous studies in accounting have examined the role of the board within the principal-agent framework. These studies resulted in extremely important insights. For example, prior studies find that that smaller boards (Yermack 1996; Core et. al 1999; Carter and Lorsch 2004), that meet more frequently (Carcello et al. 2002, Abbott et al. 2003), who have more financial expertise (Bedard et al. 2007; Carcello et al. 2006) and are more independent (Beasley 1996; Klein 2002), can monitor management more effectively.

Aside from monitoring management, the board needs to perform other tasks. The ability to perform these tasks depends on the qualities of the board. In general, board members are highly educated and influential group of people, including CEOs, politicians, academicians and other high ranked executives. This group has vast knowledge of the business environment and is well connected. Using their knowledge and connections board members can assist management to run their companies more effectively. Disciplines outside of accounting often concentrate on board characteristics that go beyond the monitoring responsibility of the board. These responsibilities include, providing advice and consultation to management (Westphal 1999), helping set future strategy (Williamson 1999), and assisting in securing needed resources (Boyd 1990). This line of research finds that effective advising and board involvement depends on two conditions: (1) Board members should be well informed with regard to company affairs and devote sufficient time to perform their responsibilities. (2) Management must trust their board members and seek their advice.

## 1.2 BOARD COMMITTEES AN INTEGRATIVE VIEW

Following a number of highly publicized accounting scandals in late 2001 such as Enron and WorldCom, the Sarbanes Oxley (SOX) act was enacted in 2002. SOX, along with the major stock exchanges (NYSE, NASDAQ and AMEX) set out to improve the confidence of investors in public companies by taking steps aimed at improving the quality of financial reporting. These actions include stricter corporate governance regulation. Recent requirements stemming from SOX and the financial markets (NYSE 303A, SEC release no. 34-48745) mandate that companies should establish audit, compensation and nomination committees which should comprise exclusively independent board members. Many studies in accounting literature have examined the work of these committees. However, in most cases, each study examines the work of a specific committee in isolation, without considering multiple committees or the interplay between board committees.

The audit committee is responsible for the quality of the financial reports and the internal controls. Studies examining the work of the audit committee generally focus on four audit committee characteristics including the independence and the expertise audit committee members, and the size and diligence of the audit committee. They examine how these characteristics affect the relationship with the auditor, including audit fees (Carcello et al. 2002, Abbott et al. 2003a, and Abbott et al. 2003b), non-audit services (Abbott et al. 2003b) and auditor selection, dismissal and resignation (Abbott et al. 2000, Carcello et al. 2003 and Lee et al. 2004). Additionally, they examine how they relate to the quality of financial reports including the quality of earnings (Klein 2002, Dhaliwal et al. 2006, Krishnan and Visvanathan 2006 and Carcello et al. 2006), the likelihood of a financial statement restatement (Abbott et al. 2004 and Agrawal and Chadha 2005) and

the quality of internal controls (Bedard et al. 2008, Zhang et al 2007 and Krishnan 2005). Results generally indicate that larger, more independent audit committees with more experts that meet more frequently are associated with better corporate governance and better performance. Results of these studies did not go unnoticed by regulators. Audit committees are now required to be entirely composed of independent board members, comprised of at least three members (SEC 2003) and need to designate at least one member as a financial expert or explain why no such member is designated.

The compensation committee is charged with setting executive pay. Consequently, a number of studies examine whether the composition of the compensation committee, with a focus on compensation committee independence, affects executive compensation. Overall results of these studies are inconclusive. Conyon (2006) finds no evidence that insiders or CEOs of other firms who serve on the compensation committee raise the level of CEO pay. Additionally, Anderson and Bizjak (2003), Vafeas (2003) and Daily (1998) find no evidence that greater committee independence affects executive pay. In contrast, Newman and Mozes (1999) show that the relationship between CEO pay and performance is biased in favor of the CEO among firms that have insiders on the compensation committee. Similarly, Main et al. (1995) find that compensation committees, whose chair has been appointed by the CEO, grant the CEO higher compensation.

Finally, the nominating committee is responsible for reviewing and nominating potential directors to fill vacancies. Research that examines nominating committees mainly examines the consequences of CEO involvement in the director selection process. Researcher proxy for CEO involvement when the CEO sits in the nominating committee,

or if the company does not have a nominating committee. In this case, the nominating process is the responsibility of the entire board, on which the CEO, in most cases, is a member. Shivdasani and Yermack (1999) find that when the CEO is involved in the selection process, fewer independent directors and more affiliated directors are appointed to the board. Additionally, they find that when the CEO is involved stock price reactions to "independent" director appointments are significantly lower. Similarly, Klein (1998) finds that when the CEO is involved in the director selection process it results in lower percentages of outside directors on the audit, compensation, and nominating committees. Finally, Carcello et al. (2006) find higher frequency of restatements in firms where CEO is involved in the selection process. Taken together, these research findings suggest that independent nominating committees should perform better.

The aforementioned studies yield significant insights that enrich our understanding with respect to the work of each committee. However, these studies examine each committee in isolation from others and do not examine how decisions that relate to more than one committees affect the firm For example, some directors' personal attributes that might be considered desirable on one committee could be detrimental in another. Since, in most cases, directors serve on more than one committee it is important to examine the duties of multiple committees in a common sample. Another example is if a director is socially tied to the CEO then this director, most likely, should not be in charge of compensating that CEO. However, if the CEO trusts this director enough to consult with her/him then tasks that require collaboration can benefit from such a social relationship (Westphal 1999).

Each of my two essays takes an integrative view of boards' committees and addresses the advising role of the board or its committees. The first essay address the advising role of the audit committee in helping management maintain a good system of internal controls and "clean" financial reports. This essay also examines, in a common sample, how social ties between management and independent directors affect the performance of both the audit and compensation committees. The second essay examines the tradeoffs between monitoring and advising and tests whether boards that invest a high proportion of their time in monitoring can still be effective in advising. Viewing the three required committees as one unit, this essay examines how the joint decisions to staff independent board members into these committees affect firm value.

## 1.3 Summary - The Effect of Social Ties in the Board Room on CEO Compensation and Financial Reporting Quality

This essay examines whether social ties between independent directors and management (inside directors) affect CEO compensation, internal controls quality and financial reporting quality. I examine different theories suggesting that, for different tasks performed by the board, social ties can lead to either desirable or undesirable outcomes. With respect to executive compensation I examine the managerial power theory (Bebchuk and Fried 2004), which claims that social and psychological ties between managers and independent directors contribute to an increase in CEO power and CEO compensation. With respect to financial reporting quality, I examine the board collaboration model (Westphal 1999) and the theory of friendly boards (Adams and Ferreira 2007). These theories predict that, for certain tasks of the board, personal ties could lead to better outcomes.

Using social network analysis and over 14,000 unique directors serving on more than 2,000 distinct boards I construct proxies for social ties between management and independent board members. Consistent with the managerial power theory, I find that these social ties are associated with higher CEO compensation. Further, I find that only social ties to compensation committee members contribute to these results. Consistent with the board collaboration model and the theory of friendly boards, I find that the likelihood of material weaknesses (MW) or restatements is lower in companies with social ties. Further analysis reveals that only social ties to members of the audit committee affect this reduced likelihood. I conclude that depending on the context, social ties between management and independent board members can have a beneficial or adverse outcome.

## 1.4 Summary - Internally Busy Boards and Firm Value: Evidence from Overcommitted Committee Members

This essay examines the association of the internal busyness of boards with firm value. During the sample period, boards of public companies were required to have three committees (audit, compensation and nomination) composed entirely of independent board members. Complex committee work in the current environment and fewer board members who can serve on these committees could increase the likelihood that independent directors will not be able to both effectively perform their committee work and allocate sufficient time for their strategic responsibilities. I find that firms with internally busy boards, those in which the majority of independent directors serve on two or more committees, are associated with lower firm value as measured by Tobin's Q. These results are robust to variations in sample construction and variable measurement

specifications. Additional analysis confirms the findings of prior studies which observe that larger boards are associated with lower firm value. I find that this association is more pronounced in large boards that fail to effectively allocate committee assignments. Further, results show that boards that are able to free directors from compliance and monitoring activities (i.e. the three mandatory committees) exhibit higher firm value. Finally, I also confirm that externally busy boards, those in which the majority of independent directors serve on multiple boards, are associated with lower firm value. However, interestingly, there is no further decrease in firm value among companies with boards that are both internally and externally busy. This paper directly relates to the vast literature on busy boards and board size and has implications for every board that needs to decide how to structure and allocate board members to committees. Although, in the short run, it is hard to change the size of the board, adjustments to committee size and committee allocation can be fairly easily obtained. If done effectively, these types of changes could potentially reduce the compliance burden shared by independent board members, allowing them to spend more time on advising and thereby increase firm value.

# 2 The Effect of Social Ties in the Board Room on CEO Compensation and Financial Reporting Quality

## 2.1 INTRODUCTION

Corporate governance has been studied for many years, across many different disciplines including economics, management, sociology, finance, accounting and auditing (e.g. Westphal 1999, Yermack 1996, Core et al 1999, Bedard et al. 2007). Many prior studies focus on the role of the board of directors in the governance mosaic and question how boards' structure could be improved to better serve shareholders. One important board characteristic that received increased attention is independence (Lorsch 1989, Klein 2002). Typically, higher level of board independence was found to be associated with better governance. In response to recent high profile accounting scandals and the concern over board independence the major stock exchanges and the Sarbanes Oxley act (SOX) now mandate that the compensation, nomination and audit committees should be solely composed of independent board members, and that the board itself have a majority of independent board members. Research that follows SOX confirms that boards of directors have become more independent (Chhaochharia and Grinstein 2004). However, while board members can adhere to the formal independence rules and regulations, they can still be socially related to management.[1] The majority of governance activists usually criticizes the existence of management-board social relationships (Fredrickson et al. 1988) arguing that they promote board passivity and reduce its monitoring effectiveness. Further, the dominating governance theories, including the

[1] Directors are considered independent if they are not current or former employees of the company, and are not affiliated with the firm other then through their directorship

agency theory (Fama and Jensen 1983) and the managerial power theory (Bebchuk and Fried 2004) both emphasize the importance of independence to the monitoring role of the board. Both theories conjecture that management will "abuse" their social relationships and influence board members to adhere to their wishes. For example, Bebchuck and Fried (2004) claim that managers use their influence to extract higher compensation that is not aligned with their performance.

On the other hand, drawing from theoretical frameworks on advice seeking and social ties in organizations, research has shown that social relationships between independent board members and management can improve the level of collaboration (Westphal 1999) and the level of information sharing between the two parties (Adams and Ferreira 2007). This research demonstrates that social factors such as trust and friendship may encourage rather than obstruct board involvement in administrating a firm and consequently lead to increase in board effectiveness. For example, Westphal (1999) demonstrates that such social ties result with better strategy formation. In addition, Cohen et al. (2007) show that when auditors assess control risk they consider other board roles (beside the monitoring role) and assess a lower risk to companies in which the board can assist management in running the company. Jointly, these theories suggest that social ties between independent board members and management could lead to either adverse or favorable outcomes. Examining these contradictory effects is the goal of the current study.

To achieve this goal I consider two inherently different tasks that are entrusted to the board of directors, and examine how social ties between independent board members and management (inside directors) influence the board ability to perform these tasks

effectively. The first task is the responsibility of the board to set CEO compensation. This task directly relates to the principal/agent dilemma and clearly requires that the board be socially detached from management. The second task relates to board responsibility over internal controls and financial reporting quality. This responsibility is shared with management, and social ties in this context could lead to enhanced collaboration and improved outcome. These two tasks are usually delegated to specific board committees. CEO compensation is the responsibility of the compensation committee, whereas oversight over the internal controls and the financial reports is the responsibility of the audit committee. Consequently, when examining the effects of social ties it is important to distinguish between social ties with the general board and social ties to members that serve on these specific committees.

Social ties between management (inside directors) and independent directors can originate from different circumstances. For example, if directors and management are members of the same golf club, or go to the same social events, they might develop a personal relationship. Another more visible social tie is established when management and their independent directors serve together on other boards (Larcker et al. 2006, Guedj and Barnea 2007). Because of data availability, I concentrate on the latter. I use social network analysis (Wasserman and Faust 1997) to construct proxies for social ties between management and independent directors. I first construct a network of director-companies affiliations. Then, if a manager and an independent board member serve together on a different board (i.e., that is not the managers' company) I determine that a social tie exists. I then refine these proxies to reflect social ties with general board

members as well as social ties to specific committee members. Finally, using these proxies I examine the abovementioned theories.

The results of this paper contribute to the literature on corporate governance in several ways. Consistent with the managerial power theory and with results reported by Larcker et al. (2006) I predict and find that CEO base salary and CEO total cash compensation is higher in companies where social ties between managers and independent board members exist. I add to the existing literature by demonstrating that excess CEO compensation exists only in companies where social ties involve members of the compensation committee. These results suggest that only social ties with board members that have the power to influence CEO compensation have a significant impact. On the other hand, consistent with the collaborative board model (Westphal 1999) and the theory of friendly boards (Adams and Ferreira 2007), I predict and find that financial reporting quality is higher when social ties exist. Specifically, I find that companies are less likely to have a material weakness and financial statement restatements if social ties between managers and board members exist. Further, these results hold only in companies where such social ties involve members of the audit committee. Hence, it highlights that social ties are influential only if the socially related board members can directly influence the outcome.[2]

I conclude that the ramifications of social ties between management (e.g. inside directors) and independent directors are more complicated than previously observed. First, these ties are important only for board members with a direct responsibility over a

[2] Collusion behavior between management and the audit committee could lead to a decision not to report MWs or to restate the financial reports; this behavior could also explain the observed results. However the independent auditor is also involved in such decisions. In addition the auditor is also required to test and attest on the internal control (SOX section 404). Hence if a collusive behavior exists it needs to involve all three parties and is less likely.

particular task. Second, while these results support previous findings that social ties can have adverse effect on CEO compensation I also find that they have favorable effect on financial reporting quality. The latter stands in contrast to the common belief that social ties between management and independent board members should always be avoided, and suggests that for several boards' tasks social ties can improve the outcome. I propose to regulators the need to refine the definition of independence especially with respect to membership on the compensation committee where social independence is crucial. Yet, regulators also need to promote an environment of collaboration between management and audit committee members.

The rest of the paper is organized as follows: The second section discusses the relevant literature and develops the hypotheses. The third section presents the sample, methodology and measurements. Findings of the paper are presented in the fourth section. In the fifth section I discuss the limitations of this study, conclusions related to the findings and directions for future research.

## 2.2 Background, Motivation and Hypotheses

Social relationships between individuals can alter their behavior (Westphal and Stern 2006). One empirical method for studying social relationships is social network analysis.[3] A social network of corporate directors is established when directors serve together on multiple boards (director network). Applying social network analysis to the director network can divulge information on social ties between individual directors that is not visible when examining these individuals at a company level analysis. Many studies in accounting and auditing look at the company level, and examine how characteristics of boards and committees members, such as their independence and accounting expertise, affect executive compensation, accrual quality, audit quality and internal control quality (e.g. Core et al. 1999, Klein 2002, Carcello at al. 2002, Abbott et al. 2004, Bedard et al. 2007). However, while network analysis is used routinely and reliably in areas such as sociology and management (Wasserman and Faust 1997, Westphal and Stern 2006), research in financial economics and accounting has only recently begun to take advantage of this methodology. Hochberg et al. (2007) construct a venture capital network and find that a more connected venture capital firm performs better. Kuhnen (2007) finds that social connections in the mutual fund industry affect fund performance. More related to the current study, Guedj and Barnea (2007) examine directors' network and find that CEOs who lead more connected boards receive higher compensation that is less sensitive to performance. Finally, Larcker et al. (2006) also examine a director network and find that CEO compensation is higher in companies wherein management have close social ties with the general board. The need for additional research that employ social network

[3] For a general review of social network analysis methods see Wasserman and Faust 1997.

analysis to study corporate governance is especially important, given the insightful finding of the sparse aforementioned research.

The current study examines a director network and applies social network analysis method to extract proxies for social ties between management (inside directors) and independent directors. Additionally these proxies are further refined to capture specific social ties between management and independent board members that are on the compensation or audit committees. Similarly to Larcker et al. (2006), in the current study a social tie exists if a manager (inside director) and an independent director serve together on the board of at least one *other* company, in addition to the manager's company. The use of such a proxy is supported by qualitative and survey research showing that CEOs and other managers serving as independent directors are often asked to recommend candidates for director's positions (Lorsch, 1989; Seidel and Westphal, 2004), and when asked, CEOs are more likely to recommend friends for board appointments (Westphal and Stern 2006). Hence, the director nomination process can result in boards that contain managers and their friends and this might directly influence the ability of the board of directors to function effectively.

The board of directors is responsible for performing two primary tasks. First, boards are responsible to oversee and control company's' management and by doing so, reduce the principal agent problem (Fama and Jensen 1983). Second, boards should provide advice and consultation to management on matters that pertain to company's operations (Pfeffer and Salancik 1978). Social ties between management and independent board members can have conflicting effect on the effectiveness of the board. On the one hand, it is believed that directors engage in less comprehensive monitoring and exert less control

over management with whom they have social ties (Fredrickson et al. 1988). This would hamper the effectiveness of the board. On the other hand, social ties can increase the level of collaboration (Westphal 1999), and the level of advice seeking and information sharing (Adams and Ferreira 2007) between board and management. This would contribute to board effectiveness. Therefore, social ties between management and independent board members might impact the effectiveness of boards in their advising role and monitoring role in a different way.

### 2.2.1 Managerial Power Theory and CEO Compensation

One important task performed by the board is setting CEO compensation. Determining CEO compensation requires social independence on the part of the board. It is commonly believed that management (CEO) will seek to maximize their compensation even at the expense of the owners (i.e. shareholders). This phenomenon is part of the principal agent dilemma and is partially alleviated in the presence of independent board of directors (Fama and Jensen 1983). In carrying out this responsibility the board of directors is acting on behalf of the shareholders (principal) and should grant management a competitive compensation that aligns their objectives with that of shareholders. Social ties between management and the board can prevent the board from performing this role effectively. The managerial power theory (Bebchuk and Fried 2004) predicts that even though an independent board is placed to represent the principal (e.g. shareholders), when independent directors perform compensation decisions the outcome will be more favorable to management. The theoretical explanation for this phenomenon is that the CEO has either power/control over the board or is socially and psychologically tied to individual directors. CEO power/control over the board and its effect on CEO

compensation has been widely tested, using proxies such as board size, CEO tenure, CEOs who chair the board, percentage of inside directors and busy directors (Core et al. 1999, Boyd 1994, Bebchuk et al. 2002, Fich and Shivdasani 2006). However, while the concept of social ties and its adverse effect on CEO compensation is well accepted (Bebchuk and Fried 2004), there are only a handful of empirical attempts to test it. Fich and White (2003) find that CEO compensation tends to be higher when the board includes one or more pairs of board members who serve together on more than one board. They conjecture that the existence of such pairs is a proxy for "sympathetic" directors. Yet, their proxy does not distinguish between social ties that involve management and independent directors to other types of social ties. Larcker et al. (2006) recognize differences between these types of social ties and capture in their analysis only social ties between inside directors (management) and independent directors. Hence, in their study, a social tie exists if a manager (inside director) and an independent director serve together on the board of at least one *other* company, in addition to the home company of the manager. They find that CEO total compensation is higher at firms where such social ties exist and surmise that their results are consistent with the assertion that the quality of monitoring by the board of directors is hindered by these social ties. Finally, using a more restrictive measure, Hallock (1997) finds that in companies where reciprocal social ties exist, the CEO earns significantly higher salary. He measures reciprocal ties narrowly by concentrating only on instances in which an insider of company A serves on the board of company B and an insider of company B serves on the board of company A. Using the above research as a baseline, the first set of hypotheses are formalized to retest previous

findings. H1a retests the findings of Hallock (1997) and H1b retests the findings of Larcker et al. (2006).

**H1a:** Ceteris paribus, CEO compensation will be higher in companies where reciprocal social ties exist.

**H1b:** Ceteris paribus, CEO compensation will be higher in companies where social ties between management and independent board members exist.

The responsibility for setting CEO compensation is usually delegated to the compensation committee. Regulatory reforms by the SEC and tax law provisions emphasize that the compensation committee is responsible for setting and monitoring CEO compensation.[4] In addition, they emphasize that the existence of non-independent members on the compensation committee might result in compensation packages that are favorable to management. In order to ensure compliance with that regulation, companies are not permitted to deduct pay in excess of 1M$ annually per executive unless they achieve performance goals that were set by a fully independent compensation committee. The Sarbanes Oxley (SOX) act and legislation by the NYSE and NASDAQ also emphasize the importance of a fully independent compensation committee.[5]

Consequently, a number of studies examine whether the composition of the compensation committee affects CEO compensation. Overall results of these studies are inconclusive. Conyon (2006) finds no evidence that insiders or CEOs of other firms who serve on the compensation committee raise the level of CEO pay. Additionally, Anderson

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[4] SEC Release 33-6940 and 33-6962. IRS(Section 162(m) of the IRC)

[5] NYSE rule 303A all listed firms should have a compensation committee and all members of that committee should be independent. In the same spirit the NASDAQ Amendment to Rules 4200 and 4350 dictate that compensation of the CEO of a listed company should be determined by a majority of the independent directors or by a compensation committee comprised of independent directors.

and Bizjak (2003), Vafeas (2003) and Daily (1998) also find no evidence that greater committee independence affects executive pay. In contrast Newman and Mozes (1999) show that the relationship between CEO pay and performance is biased in favor of the CEO among firms that have insiders on the compensation committee. Similarly, Main et al. (1995) find that compensation committees, whose chair has been appointed by the CEO, grant the CEO higher compensation. The theory of managerial power (Bebchuk and Fried 2004) asserts that the compensation committee cooperates with the CEO and agrees on excessive compensation, settling on contracts that are not in shareholders' best interest. Hence a CEO that is socially tied to compensation committee members might influence the compensation decision process. Following this research and consistent with the responsibility of the compensation committee over CEO pay, I break down social ties into two separate measures: social ties with at least one independent board member who serves on the compensation committee and social ties with other independent board members. I expect that excess CEO compensation will be driven by ties to members on the compensation committee rather than members on the general board. The following hypothesis is phrased in the alternative form.

**H2:** Ceteris paribus, CEO compensation will be higher only in companies where social ties between managers and independent board members involve at least one board member who serves on the compensation committee.

While setting CEO compensation objectively, requires that directors be socially detached from management, other tasks performed by the board and management can

benefit from social ties. In tasks where the board and management share similar objectives, social ties can promote a greater level of collaboration between the two parties leading to better outcomes (Westphal 1999).

### 2.2.2 Board Collaboration Model and Financial Reporting Quality

Aside from monitoring management, boards are also entrusted with the task of providing advice and counsel to management (Pfeffer and Salancik 1978). However most of the accounting and auditing research focused primarily on agency theory (Fama and Jensen 1983) and the monitoring role of the board. Cohen et al. (2006) critique this one dimensional view and claim that, at least with respect to auditing research, other roles of the board of directors should be considered. Cohen et al. (2007) confirm this claim by showing that when auditors assess control risk they consider other board of director roles (aside from monitoring) and assign lower control risk to companies where the board can assist management in running the company. Similarly, the board collaboration model (Westphal 1999) suggests that when the board performs certain duties, the existence of personal ties is associated with better performance. This theory draws from theoretical framework on advice seeking and social ties in organizations, and claims that social factors, such as trust and friendship, may promote rather than hinder board involvement and effectiveness in administering a firm. The same relation is also suggested by Adams and Ferreira (2007), who show that when the board's preferences are aligned with management preferences, the board provides better quality advice that leads to positive outcomes.

However, effective advising and board involvement depends on two conditions: (1) Board members should be well informed with regard to company affairs. (2)

Management must trust their board and seek their advice. A recent survey finds that independent board members spend on average 100 hours per year on their board duties (Carter and Lorsch 2004). This amount of time does not always allow them to gain sufficient knowledge of the company. Therefore, board members often depend on information received from management. Consistent with that premise, Nowak and McCabe (2003) finds that independent directors believe that the CEO controls the flow of information. In addition, several auditors in the Cohen et al. (2002) study argue that if management does not want to be governed, they will not be. Hence social ties between management and the board will increase the trusting relationship, the collaboration level and will facilitate better knowledge sharing and governing.

The responsibility over the accuracy of the financial statements and the quality of the internal controls is entrusted to management as well as to the board of directors. The Securities and Exchange Commission rules (SEC 2002) states the following:"...*we are adopting rules to require an issuer's principal executive and financial officers each to certify the financial and other information contained in the issuer's quarterly and annual reports. The rules also require these officers to certify that: they are responsible for establishing, maintaining and regularly evaluating the effectiveness of the issuer's internal controls...*". This statement emphasizes the personal responsibility of the CEO and the CFO in assuring that the financial reports are correctly stated and that there are no MWs in the internal controls. Aside from the regulatory requirements that assign such responsibility to management, in most cases MWs in the internal controls are not in management's best interest.[6] More specifically, the presence of MWs leads to negative

[6] In some cases "bad" managers would strive to have a weak internal control system that will allow them to manipulate the financial reports

stock returns (De Franco et al. 2005; Hammersley et al. 2007), higher cost of capital (Ashbaugh-Skaife et al. 2007) and higher audit fees (Raghunandan and Rama 2006; Hoitash et al. 2007). Additionally, it is associated with personal penalties such as higher CFO turnover (Li et al. 2007) and reduced CFO bonus payments (Hoitash et al. 2007). Similarly, with respect to the board of directors, Srinivasan (2005) finds significantly higher director turnover following a financial restatement, and an increased likelihood of turnover for directors with accounting expertise. Furthermore, in the post SOX environment both directors and management are vulnerable to litigation directed towards their personal wealth (Black et al. 2005, and Klausner et al. 2005). Taken together, directors and management share similar risks with respect to financial reporting quality and consequently share similar objectives.

Previous research examining how board characteristics are related to MWs in internal controls and the need to restate the financial reporting yields inconclusive results. With respect to internal controls, Doyle et al. (2007) fail to observe a significant association between a corporate governance quality index and the likelihood of disclosing material weaknesses whereas Bedard et al. (2007) find that companies with stronger boards are less likely to report MWs. With respect to restatements, Abbot et al. (2004) find that larger boards are associated with higher frequency of restatements while Carcello et al. (2006) do not find such a relationship. On the other hand, Carcello et al. (2006) find that companies in which CEOs also chair the board are associated with a higher frequency of restatement while Abbot et al. (2004) do not find such a relationship. While these studies examine specific board characteristics with respect to MWs and

restatements, I am not aware of any study examining how social ties between management and board members are associated with MWs or restatements.

Consistent with the board collaborative model and the literature cited above, the objectives of management and the board with respect to internal controls and financial reporting quality are aligned. Hence, social ties between management and board members should lead to a higher likelihood of collaboration and better outcomes. Consequently, I form the following hypotheses in the alternative form.

**H3a:** Ceteris paribus, the likelihood of disclosing a material weakness in internal controls will be smaller for companies where social ties between management and independent board members exist.

**H3b:** Ceteris paribus, the likelihood of restatements will be smaller for companies where social ties between management and independent board members exist.

While the task of assuring financial reporting quality is entrusted to the board, it is primarily the responsibility of the audit committee within the board. As mentioned by the SEC: *the audit committee need to discuss the company's annual audited financial statement and quarterly financial statements with management; has the responsibility to oversee internal controls, and to communicate with the board of directors to assure that the overall internal controls and the reporting process are effective* (SEC, 34-48745, 2003). Consequently, most current audit committee charters include the following duties (Huron 2006):

1. Reviewing and monitoring the annual and quarterly financial statements and other financial reports;

2. Monitoring the internal accounting controls

Previous research demonstrates that audit committee characteristics and composition can affect the quality of the financial reports and the internal controls. Using pre SOX internal control disclosures made during auditor changes, Krishnan (2005) finds that the likelihood of disclosing a problem is lower for firms with audit committees with greater financial expertise. More recent studies using the mandated 404 reports also find that financial expertise on the audit committee is negatively associated with MWs and that audit committee size is not associated with MWs (Bedard et al. 2007, Zhang et al. 2007). Bedard et al. (2007) also find that the frequency of audit committee meetings is positively associated with MWs, and suggest that the audit committee meets more frequently as a response to the discovery of MWs. Finally, Krishnan (2005) also finds that audit committee independence is negatively associated with the disclosure of MWs while Zhang et al. (2007) fail to find a similar association.[7] With respect to restatements, research has found that the presence of audit committee financial expert, audit committee size and audit committee independence are negatively associated with the likelihood of restatements (Abbott et al. 2004, Agrawal and Chadha 2005, Carcello et al. 2006). The aforementioned research is most consistent with the benefits associated with independent audit committees. The current paper does not question the importance of such independence; rather, it predicts that, given the requirement that all audit committees

[7] The difference in result with respect to audit committee independence could be a result of different regulatory environment. While Krishnan (2005) used pre SOX data where variability in audit committee independence existed, Zhang et al. (2007) used post SOX data where the variability in audit committee independence was significantly reduced.

must be fully independent (SOX 2002), social ties between independent audit committee members and management might facilitate a collaborative environment with management resulting in improved internal controls and financial reporting accuracy. This association was not studied by prior research. For instance, if management (i.e., the CEO and the CFO) would sufficiently trust audit committee members they might share with them, in advance, sensitive information regarding potential problems in the financial reporting process or in the internal controls. This way, audit committee members can assist management in addressing these issues and remediate problems before they become public. This line of reasoning is supported by prior research, showing that friends are more prone to trust each other with sensitive information (Krackhardt, 1992, Westphal 1999, Adams and Ferreira 2007). Furthermore, a KPMG (2004) survey examining CEO involvement with the audit committee shows that in 84% of the surveyed companies the CEO attends at least some audit committee meetings, in 50% s/he takes an active role in those meetings, and in 25% of the companies s/he attends only if invited. Social ties between audit committee members and the CEO could encourage the chair of the committee to invite the CEO to attend some of the committee meetings and consequently it might encourage the CEO to take an active role and share his/her concerns and other information with the committee.[8]

Following prior research and the view that directors who serve on the audit committee are most likely to be those who can influence the quality of the reports, I break down social ties into two separate measures: social ties between management and at least

[8] According to proxy statements under discussion that pertain to the audit committee it is mention that the audit committee meet with management and discuss on matters that relate to the financial reporting process

one independent audit committee member, and social ties between other independent directors and management. The following hypotheses are phrased in the alternative form.

**H4a:** Ceteris paribus, the likelihood of disclosing internal controls material weakness will be smaller only for companies where social ties between management and independent audit committee members exist.

**H4b:** Ceteris paribus, the likelihood of restating the financial reports will be smaller only for companies where social ties between management and audit committee members exist.

## 2.3 METHOD

### 2.3.1 Sample

The sample is drawn from a number of sources. Data on individual directors, governance information and CEO compensation is obtained from the Corporate Library database. *Auditanalytics* is used to collect information on internal control reports, restatements, auditor changes and auditor type. Finally, I use Compustat to collect financial variables, and SDC Platinum for merger and acquisition data. Director information is collected for the years 2001-2005 and all 5 years are used to generate social ties measures between directors and management. The period of analysis is restricted to 2004 and 2005, because these are the first two years that accelerated filers had to comply with Section 404 of SOX. During 2004 (2005) the initial sample includes 17,659 (18,277) directorships held by 13,822 (14,283) distinct individuals who serve on 1,947 (2,020) distinct companies. The number of directorship positions is greater than the number of directors because some directors serve on multiple boards. After constructing

the social ties measure I continue to collect compensation, internal control reporting, restatements, financial information and mergers and acquisitions data and eliminate companies with missing data. Because I use multiple dependent variables the sample size in the final models vary. The compensation model includes complete data for 3,498 company years. The MW models are restricted to accelerated filers with 404 reports and include 2,956 observations. Finally the restatement models include 3,525 observations.[9]

### 2.3.2 Model Specifications and Variable Definitions

#### *2.3.2.1 Director-Management social ties*

A social tie between an independent director and a manager exists if a manager (inside director) and an independent director serve/d together (in the present or in the past) on boards of at least one additional company (i.e., not the company by which the manager is employed). I capture only ties between management (insiders) and independent directors because this type of relationship is potentially the most controversial one and was documented in the literature to have adverse effects (Larcker et al. 2006). I capture ties that exist in 2004 and 2005 as well as ties that existed in prior years (2001-2003) but do not currently exist. These early ties can still indicate that a social link exists in subsequent years (2004, 2005). Table 2 shows descriptive statistics of the social ties measures broken-down by year. For each company in the sample six indicator variables were created: *InsideToIndependent* is an indicator variable equal to 1 if there is/was a social tie (in the present or in the past) between at least one inside board member to at least one independent board member, 11% (11%) of the sample companies had this type of social tie in 2004 (2005). *Reciprocal* is an indicator variable equal to 1

[9] Results are qualitatively identical when I use the smallest sample i.e., 2,956 observations for all of the analysis

when an inside director (CEO or other employee) of firm A serves on firm's B board and an inside director of firm B (CEO or other employee) serves on firm's A board. *Reciprocal* tie has been documented in the past to have influenced CEO compensation (Hallock 1997), hence it is important to control for such ties and examine whether these ties influence the results. 2% (1 %) of the companies have a *Reciprocal* tie in the year 2004 (2005). This is substantially lower than what was reported in the 1990's, for example, Hallock (1997) reports that in 1992 20% of his sample companies had a *Reciprocal* relation. The extreme decline might be attributed to the increased attention to corporate governance and to the fact that this type of social tie was associated with adverse outcomes.[10] I continue by partitioning *InsideToIndependent* into four indicator variables that reflect social ties with the compensation (audit) committee members. This partition is important because members of the compensation committee are responsible for setting the compensation level, and members of the audit committee are responsible for overseeing the internal controls and financial reporting quality. *CompensationInsideToIndependent (AuditInsideToIndependent)* and *NonCompensationInsideToIndependent (NonAuditInsideToIndependent)* represent an *InsideToIndependent* social tie where in the former there is at least one independent board member that serves on the compensation (audit) committee and in the latter there is none. Of the *InsideToIndependent* relations 54 % (60%) in 2004 and 56% (50%) in 2005

[10] In the SEC's form DEF 14A(proxy statement) under the section titled "*Compensation Committee Interlocks and Insider Participation*", the firm is required to report if there are reciprocal interlocks or if a non-independent director serves on the compensation committee.

are tied to the compensation (audit) committee.[11] The following summarize social ties variables.

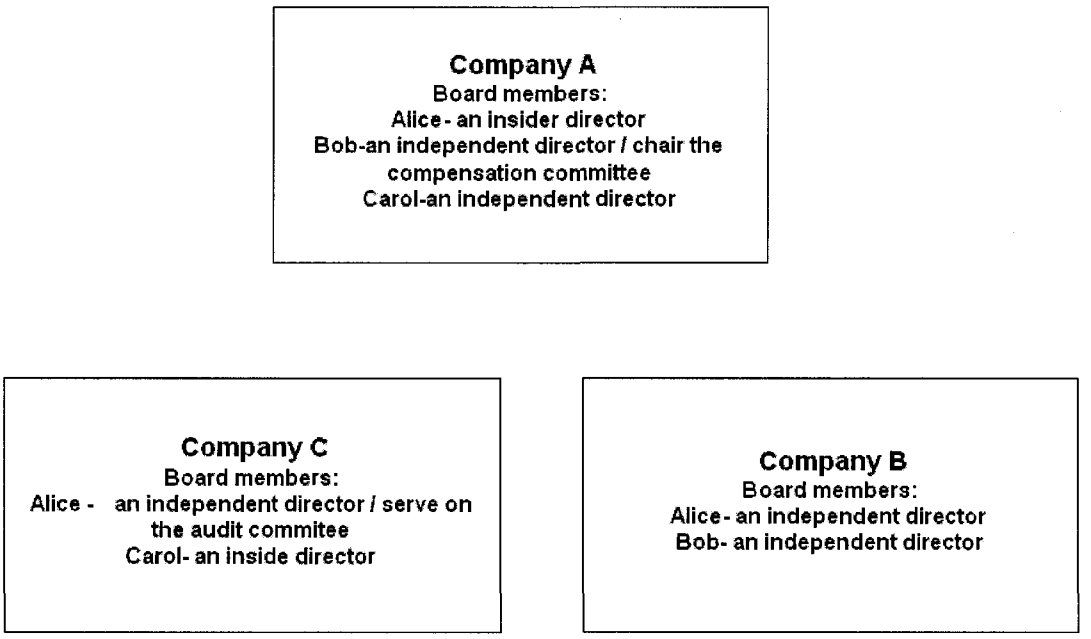
**Table 1 - Social Ties - Variables Definitions**

| ***Variable name*** | ***Variable definition[source]*** |
|---|---|
| ***Social Ties – Test Variables*** | |
| *InsideToIndependent* | An indicator variable equal to 1 if there is/was a tie (in the present or in the past) between at least one inside board member to at least one independent board member; zero otherwise[*Board analyst*] |
| *Reciprocal* | An indicator variable equal to 1 when an insider director (CEO or other employee) of firm A serves at firms' B board and an insider director of firm B (CEO or other employee) serves at firms' A board; zero otherwise[*Board analyst*] |
| *AuditInsideToIndependent* | An indicator variable equal to 1 if the InsideToIndependent tie is equal to 1, and it involves at least one independent member who serves on the audit committee; zero otherwise [*Board analyst*] |
| *NonAuditInsideToIndependent* | An indicator variable equal to 1 if the InsideToIndependent tie is equal to 1 and it does not involve any independent board member who serve on the audit committee; zero otherwise [*Board analyst*] |
| *CompensationInsideToIndependent* | An indicator variable equal to 1 if the InsideToIndependent tie is equal to 1, and it involves at least one independent member who serves on the compensation committee; zero otherwise [*Board analyst*] |
| *NonCompensationInsideToIndependent* | An indicator variable equal to 1 if the InsideToIndependent tie is equal to 1 and it does not involve any independent board member who serve on the compensation committee; zero otherwise [*Board analyst*] |

[11] When constructing the ties measures, I control for mergers and acquisitions that might have taken place. If two companies where distinct in the past, but in present day they are joined into one company, I would expect to see joined directors between the present company and the past company. This is not what the measure is trying to capture and hence I exclude all relation that are the source of M&A activity.

Figure 1 will help illustrate the construction of the social tie measure; the figure presents three distinct companies A, B and C. It explains what social ties each company has:

**Figure 1 – an Illustration of Measurement Construction**




**Company A:**

1. There is a social tie between Alice (insider) to Bob (independent) – they are both on the board of company B , there is also a tie between Alice (insider) to Carol (independent) – they are both on the board of company C. Therefore the indicator variable *InsideToIndependent* for company A will be equal to 1.
2. Carol is an inside director of company C and Alice is an inside director of company A, and there both serve on each other boards, therefore the indicator variable *reciprocal* will be equal 1 for company A
3. Bob serve on the compensation committee of company A – therefore the indicator variable *CompensationInsideToIndependent* will be equal to 1

**Company B:**

1. Both of the directors are independent directors therefore all indicator variables will be equal to 0

**Company C:**

1. There is a social tie between Alice (independent director) to Carol (inside director) – they are both on the board of company A. Therefore the indicator variable *InsideToIndependent* for company C will be equal to 1.
2. Carol is an insider director of company C and Alice is an insider director of company A, and there both serve on each other boards, therefore the indicator variable *reciprocal* will be equal 1 for company C
3. Alice serves on the Audit committee of Company C – therefore the indicator variable *AuditInsideToIndependent* will be equal to 1

**Table 2 - Descriptive Statistics on Management-Directors Ties by Year and Type**

| | 2004 | | | 2005 | | |
|---|---|---|---|---|---|---|
| ***Tie Type*** | ***Total # of Companies*** | ***%*** | ***# of tied companies*** | ***Total # of Companies*** | ***%*** | ***# of tied compa nies*** |
| *InsideToIndependent* | 1,743 | 0.11 | 189 | 1,782 | 0.11 | 193 |
| *Reciprocal* | 1,743 | 0.02 | 32 | 1,782 | 0.01 | 25 |
| *CompensationInsideToIndependent* | 1,743 | 0.06 | 102 | 1,782 | 0.06 | 107 |
| *NonCompensationInsideToIndependent* | 1,743 | 0.05 | 87 | 1,782 | 0.05 | 86 |
| *AuditInsideToIndependent* | 1,743 | 0.06 | 113 | 1,782 | 0.05 | 98 |
| *NonAuditInsideToIndependent* | 1,743 | 0.04 | 76 | 1,782 | 0.05 | 95 |

#### *2.3.2.2 CEO compensation – dependent variables*

Compensation data were obtained from the Corporate Library database for the years 2004 and 2005. Table 7 presents descriptive statistics for the dependent and control variable for the compensation models. I use two measures to capture CEO compensation, first, CEO_BASE_SALARY, the salary of the CEO which is determined at the beginning of the year with a mean (median) of $675,617 ($639,618).[12] Second, CEO_TOTAL_CASH_COMP is the total cash compensation a CEO earned for the year which includes the base salary and the annual bonus. The mean (median) of CEO total annual cash compensation is $1,594,387 ($1,148,838). It is important to consider both types of compensation because there are different objectives when setting each type. The following is a summary of the compensation variables.

[12] Guedj and Barnea 2007 shows similar statistics for CEO base salary, with a mean base salary of $667,180 and median base salary of $609,350.

**Table 3 - CEO compensation - Variables Definitions**

| *Variable name* | *Variable definition[source]* |
|---|---|
| ***Dependent Compensation Variables*** | |
| *CEO_BASE_SALARY* | Salary is determined at the beginning of the year. Salary can include non-cash elements and salary taken as deferred compensation [*Board analyst*] |
| *CEO_TOTAL_CASH_COMP* | total cash compensation a CEO earned for the year which contains the sum of base salary annual bonus and other annual compensation [*Board analyst*] |

## CEO compensation - Financial control variables

CEO compensation contracts are directly linked to financial performance. I control for economic determinants that have been documented to directly affect compensation (Core et al. 1999, Larcker et al. 2006). To control for firm size the natural log of total assets is used (*lnTA)*. It is expected that compensation will be higher in larger firms. The mean (median) of *lnTA* is 7.73(7.57). To control for investment opportunities, the ratio of book to market *BTM* is used, the mean (median) of *BTM* is 45% (42%). The return on assets (*ROA)* is used to proxy for profitability, it is expected that CEO compensation increases with company's profitability; the mean (median) of *ROA* is 4% (4%). Risk is measured by calculating the standard deviation of ROA-*stdROA*- over a period of no less than three years and no more than four, the mean (median) of *stdROA* is 4% (2%). Similarly to Larcker et al. (2006) all the economic variables have been winsorized at the 2nd (98$^{th}$) percentile. In addition, I control for industry by including two digits SIC code indicators.[13] The following is a summary of the financial control variables.

[13] Since I model two years of compensation I include a dummy variable that is equal to 1 if the year is 2005 (Year2005).

**Table 4 – CEO Compensation - Financial Control Variables Definitions**

| *Variable name* | *Variable definition[source]* |
|---|---|
| ***Financial - Control Variables*** | |
| *lnTA* | The natural log of total assets [*Compustat* data6] |
| *BTM* | Book value of common equity divided by market value of equity. [*Compustat* Data60 divided by (data25 * data199)] |
| *ROA* | Net income divided by total assets [*Compustat* data172 divided by data6] |
| *stdROA* | the standard deviation of ROA over a period of no less than three years and no more than four [*Compustat*] |

#### *2.3.2.3 Governance - control variables*

In order to capture the true effect of social ties it is important to control for other governance variables that are associated with CEO compensation. I first control for compensation committee independence, *ALLCOMMCOMPINDEPENDENT,* is an indicator variable equal to 1 if all members of the compensation committee are independent, and zero otherwise. Table 7 shows that 71% of the companies have fully independent compensation committees.[14] *BOARDSIZE* captures the size of the board. It has been documented that larger boards are less effective monitors and can be more easily influenced by the CEO (Core et. al 1999; Yermack 1996) hence it is expected that board size will be positively associated with CEO compensation. In addition, it is important to control for board size since the likelihood of the existence of social ties increases with board size, the mean (median) of *BOARDSIZE* is 9.29 (9.00). I control for the percentage of independent directors on the board *PINDEPENDENT*. The effect of a majority of independent board members on CEO compensation is inconclusive, some found a positive relation between CEO compensation and the percentage of independent directors (see Lambert et al. 1993, Boyd 1994, Li and Weintrop 2005) while others found that compensation is unrelated to the percentage of independent directors on the board (see Finkelstein 1989, O'Reilly and Main 2005). The mean (median) *PINDEPENDENT*

[14] 69% and 73% of companies in my sample had fully independent compensation committee in 2004 and 2005 respectively.

are 68% (70%). It was shown that older directors are less effective monitors (Core et al. 1999, Larcker et al. 2006). I control for older directors by taking the percentage of directors that are older than 70 *PDIRECTORSOVER70*. Finally, I control for the separation of CEO from the chairman of the board duty, *CEOISCHAIRMAN* is an indicator variable equal to 1 if the CEO is also the chairman of the board and zero otherwise. I expect *CEOISCHAIRMAN* to be positively associated with CEO compensation. In 63% of the companies the CEO is also the chairman of the board.[15] The following is a summary of the governance control variables.

**Table 5 – CEO Compensation - Governance Control Variables Definitions**

| ***Variable name*** | ***Variable definition[source]*** |
|---|---|
| ***Governance – Control Variables*** | |
| *BOARDSIZE* | Number of members serving on the board of directors [*Board analyst*] |
| *PINDEPENDENT* | Percentage of independent board members [*Board analyst*] |
| *PDIRECTORSOVER70* | Percentage of directors over the age 70 [*Board analyst*] |
| *PDIRECTORSOVER4BOARDS* | Percentage of directors serving on more than 4 boards [*Board analyst*] |
| *CEOISCHAIRMAN* | An indicator variable equal to 1 if the CEO is also the chairman of the board; zero otherwise [*Board analyst*] |
| *ALLCOMMCOMPINDEPENDENT* | An indicator variable equal 1 if all the compensation committee member are independent; zero otherwise [*Board analyst*] |

#### *2.3.2.4 CEO characteristics and ownership structure – control variables*

I control for three CEO characteristics and one type of ownership structures. *CEOAGE* – the age of the CEO, *CEOTENURE*- the number of years the CEO has been in office and *CEOISFOUNDER* – is an indicator variable equal to 1 if the CEO is also the founder of the company and zero otherwise. The mean age of a CEO is 55, s/he serves 7.5 years as CEO and in 8.5% of the companies the CEO is also the founder of the company.

[15] Using a sample of companies from 2004, Chhaochharia and Grinstein 2006 show that in 64% of their companies the CEO also chair the board of directors. This statistic is similar to mine.

*OWNERSFIVEPERCENTPCTG* – is the percentage of outstanding shares held by any 5% or greater shareholders, this variable indicate that there are dominant outside shareholders and it is expected to be negatively associated with CEO compensation. The mean (median) of *OWNERSFIVEPERCENTPCTG* is 20% (18%). The following is a summary of CEO characteristics and ownership structure variables.

**Table 6 – CEO Characteristics and Ownership Structure - Variables Definitions**

| ***Variable name*** | ***Variable definition[source]*** |
|---|---|
| ***Dependent Variable*** | |
| ***CEO Characteristics and Ownership Structure – Control Variables*** | |
| *CEOAGE* | Age of the CEO [*Board analyst*] |
| *CEOTENURE* | Number of years the CEO has been in office [*Board analyst*] |
| *CEOISFOUNDER* | An indicator variable equal to 1 if the CEO is also the founder of the company; zero otherwise [*Board analyst*] |
| *OWNERSFIVEPERCENTPCTG* | Percentage of outstanding shares held by any 5% or greater shareholders[*Board analyst*] |

**Table 7– Descriptive Statistics on CEO Compensation, Dependent and Control Variables**

| ***Variable*** | ***Total # of Companies*** | ***mean*** | ***Median*** | ***Std Dev*** |
|---|---|---|---|---|
| ***Dependent Variable*** | | | | |
| *CEOBASESALARY* | 3,498 | 675,617.86 | 639,618.00 | 308,850.44 |
| *CEOTOTALANNUALCOMP* | 3,498 | 1,594,387.81 | 1,148,838.00 | 1,356,126.35 |
| ***Financial control variables*** | | | | |
| *lnTA* | 3,498 | 7.74 | 7.58 | 1.67 |
| *BTM* | 3,498 | 0.45 | 0.42 | 0.26 |
| *ROA* | 3,498 | 0.04 | 0.04 | 0.08 |
| *stdROA* | 3,498 | 0.04 | 0.02 | 0.07 |
| ***Governance-control variables*** | | | | |
| *ALLCOMMCOMPINDEPENDENT* | 3,498 | 0.71 | 1.00 | 0.45 |
| *BOARDSIZE* | 3,498 | 9.29 | 9.00 | 2.58 |
| *PINDEPENDENT* | 3,498 | 0.68 | 0.70 | 0.16 |
| *PDIRECTORSOVER70* | 3,498 | 0.09 | 0.00 | 0.12 |
| *CEOISCHAIRMAN* | 3,498 | 0.63 | 1.00 | 0.48 |
| ***CEO characteristics and ownership structure – control variables*** | | | | |

| | | | | |
|---|---|---|---|---|
| *CEOAGE* | 3,498 | 54.87 | 55.00 | 7.41 |
| *CEOTENURE* | 3,498 | 7.55 | 5.00 | 7.69 |
| *CEOISFOUNDER* | 3,498 | 0.08 | 0.00 | 0.28 |
| *OWNERSFIVEPERCENTPCTG* | 3,498 | 0.20 | 0.18 | 0.16 |

#### *2.3.2.5 Compensation Models*

The following linear regression model is used to test how social ties affect CEO compensation. Controls for economic determinants, and other governance and CEO characteristics are present (all are defined above).

$$CEOCOMPENSATION = \alpha + \beta_1 InsideToIndependent + \beta_2 lnTA + \beta_3 BTM + \beta_4 ROA + \beta_5 stdROA + \beta_6 ALLCOMMCOMPINDEPENDENT + \beta_7 BOARDSIZE + \beta_8 PINDEPENDENT + \beta_9 PDIRECTORSOVER70 + \beta_{10} CEOISCHAIRMAN + \beta_{11} CEOAGE + \beta_{12} CEOTENURE + \beta_{13} CEOISFOUNDER + \beta_{14} OWNERSFIVEPERCENTPCTG + \beta_{15\text{-}81} Industry + e$$

#### *2.3.2.6 Material Weakness/Restatement -Dependent Variable*

I continue by examining the influence of social ties on financial reporting quality. In order to strengthen my inferences I use more than one proxy for the financial reporting quality. The second dependent variable is the disclosure of a material weakness (MW) in the internal control over financial reporting. *MW* is coded as 1 if a company reported a MW in its Section 404 reports; zero otherwise. 11% (332) companies reported MW in their internal controls over financial reporting. The third dependent variable indicates whether a company needed to restate its financials. *RESTATEMENT* is an indicator variable equal to 1 if the company has restated its financials for the years of interest (2004, 2005); and zero otherwise.[16] Restating financial statement of a specific period often indicates that the financial statement of that period contained a material

[16] It could be the case that a company restated both the financials of 2004 and 2005 in those cases *RESTATEMENT* will equal 1 for this company for both years.

misstatement. During 2004 and 2005 15% (525) of the companies restated their financials. The following is a summary of financial reporting quality variables.

**Table 8 – Financial Reporting Quality - Variables Definitions**

| *Variable name* | *Variable definition[source]* |
|---|---|
| ***Dependent Financial Quality Variables*** | |
| *MW* | An indicator variable equal to 1 if the company had a material weakness in its internal controls; zero otherwise [*Audit Analytics*] |
| *RESTATEMENTS* | An indicator variable equal to 1 if the company had to restate its financials for the period; zero otherwise [*Audit Analytics*] |

#### *2.3.2.7 Material Weakness/Restatement-Governance variables*

In deciding on control variables I follow Bedard et al. (2007) and Zhang et al. (2007) for the MW models, and Carcello et al. (2006) and Abbot et al. (2004) for the restatements models. Since audit committee members are directly responsible to assure internal controls quality, I first control for audit committee characteristics. *ALLCOMMAUDITINDEPENDENT* is an indicator variable equal to 1 if all members of the audit committee are independent, and zero otherwise. 76% of the companies have fully independent audit committees.[17] Larger audit committees are assumed to have more power within the company (Bedard et al. 2007, Hoitash and Hoitash 2007), hence, I control for audit committee size (*ACSIZE)*, the mean(median) of audit committee size is 3.34 (3.00). A negative sign is expected on both variables. I control for other board characteristics all defined in the previous section; *BOARDSIZE CEOISCHAIRMAN* and *PINDEPENDENT*. A positive sign is expected for the first two and a negative for the last one. The following is a summary of the MWs / Restatements governance control variables.

[17] Both in 2004 and 2005 76% of the companies have fully independent audit committees.

**Table 9 – Audit Committee Governance - Variables Definitions**

| *Variable name* | *Variable definition[source]* |
|---|---|
| ***Audit Committee –Governance Control Variables*** | |
| *ACSIZE* | Number of members serving on the audit committee [*Board analyst*] |
| *ALLCOMMAUDITINDEPENDENT* | An indicator variable equal 1 if all the audit committee member are independent; zero otherwise [*Board analyst*] |
| *PAFE* | Percentage accounting experts serving on the audit committee, based on total audit committee size (individuals whose bios indicate at least one of the following qualifications: CPA, CFO, VP of finance, financial controller, CMA, CFA, principal financial officer, auditor or chief accounting officer) [*Board analyst*] |
| *PSFE* | Percentage of supervisory serving on the audit committee, based on total audit committee size (individuals whose bios indicate at least one of the following qualifications, but not one of the qualifications used to define financial experts: CEO, COO, or chairman of a board of directors) [*Board analyst*] |
| *NDFE* | An indicator variable equal to 1 if the company has an audit committee member that serves on at-least two distinct audit committees; zero otherwise [*Board analyst*] |

#### *2.3.2.8 Material Weakness/ Restatements – Control variables*

MWs and restatements are both indicators of financial reporting quality. I use similar control variables for both types of models. I follow previous research on internal controls determinants (e.g. Ashbaugh-Skaife et al. 2007, Doyle et al. 2007, Bedard et al. 2006) and previous research on corporate governance and restatements (e.g. Carcello et al. 2006 and Abbot et al. 2004). I start by controlling for company size by including the natural log of total assets (*lnTA*) expecting a negative association. I control for companies' financial health by including an indicator variable indicating whether the company sustained losses in the last two fiscal years (*LOSS*), and profitability of the company by including return on assets (*ROA).* Companies with less financial resources might invest less in internal controls hence a positive association is expected for *LOSS* and a negative association for *ROA*. I capture recent companies' structure changes by

including recent mergers (*MERGER*), restructuring (*RESTRUCTURE*) and fast growth (*EXTREMEGROWTH*). I control for complexity using the number of business and geographic segments (*SEGMENT*), and a dummy for foreign operations (*FOREIGN*). A positive signs between all of the structure changes and complexity variables and the likelihood of disclosing a material weakness or the need to restate the financial reporting are expected. I control for auditor quality by including an indicator variable for companies audited by Big 4 auditors (*BIG4*). I also control for auditor changes (*AUDITORCHANGE*) expecting a positive sign with the likelihood of disclosing a material weakness (Ettredge et al. 2006). Finally, I control for industries more prone to litigation (*LITIGATION*). The following is a summary of financial reporting quality control variables.

**Table 10 – Financial Reporting Quality - Control Variables Definitions**

| ***Variable name*** | ***Variable definition[source]*** |
|---|---|
| ***Financial Reporting Quality – Control Variables*** | |
| *BIG4* | An indicator variable equal to 1 when the auditor is a Big 4 firm; zero otherwise [Audit Analytics] |
| *LOSS* | An indicator variable equal to 1 if the company had net loss in any of the last two years; zero otherwise [Compustat data item #172] |
| *SEGMENT* | The sum of reported business and geographic segments [*Compustat* Segment file] |
| *FOREIGN* | An indicator variable equal to 1 if the company has. non-zero foreign currency translation; zero otherwise [Compustat data item #150] |
| *MERGER* | An indicator variable equal to 1 when company has experienced a merger in the past two years; zero otherwise [SDC Platinum] |
| *EXTREMEGROWTH* | An indicator variable equal to 1 if year over year industry-adjusted sales growth [data item #12] falls into the top quintile, and zero otherwise |
| *RESTRUCTURE* | An indicator variable equal to 1 if a firm was involved in a restructuring, and zero otherwise. [Coded as 1 if any of the following Compustat data items are non-zero: 376, 377, 378 or 379.] |
| *AUDITORCHANGE* | An indicator variable equal to 1 if the company changed auditors; zero otherwise [*Audit Analytics*] |
| *LITIGATION* | An indicator variable equal to 1 if a firm is in a litigious industry—SIC codes 2833 to2836; 3570 to 3577; 3600 to 3674; 5200 to 5961; and 7370; zero otherwise |

**Table 11 – Descriptive Statistics on Material Weakness and Restatements, Dependent and Control Variables**

| *Variable* | *Total # of Companies* | *mean* | *Median* | *Std Dev* |
|---|---|---|---|---|
| ***Dependent Variable*** | | | | |
| *MW* | 2,956 | 0.11 | 0.00 | 0.32 |
| *RESTATEMENTS* | 3,525 | 0.15 | 0.00 | 0.36 |
| ***Audit committee control variables*** | | | | |
| *ALLCOMMAUDITINDEPENDENT* | 3,525 | 0.76 | 1.00 | 0.43 |
| *ACSIZE* | 3,525 | 3.34 | 3.00 | 1.14 |
| ***Financial-control variables*** | | | | |
| *LOSS* | 3,525 | 0.21 | 0.00 | 0.41 |
| *MERGER* | 3,525 | 0.28 | 0.00 | 0.45 |
| *RESTRUCTURE* | 3,525 | 0.32 | 0.00 | 0.47 |
| *EXTREMEGROWTH* | 3,525 | 0.11 | 0.00 | 0.32 |
| *SEGMENT* | 3,525 | 6.51 | 5.00 | 5.18 |
| *FOREIGN* | 3,525 | 0.35 | 0.00 | 0.48 |
| *BIG4* | 3,525 | 0.95 | 1.00 | 0.21 |
| *AUDITORCHANGE* | 3,525 | 0.06 | 0.00 | 0.23 |
| *LITIGATION* | 3,525 | 0.21 | 0.00 | 0.41 |

### *2.3.2.9 MW and Restatements Models*

The same logistic regressions model is used to test how social ties affect the likelihood of disclosing a material weakness in internal controls or the need to restate the financial statements. Controls for economic determinants, and other governance and CEOs' characteristics are present (all are defined above).

$$MW/RESTATEMENTS=\alpha+\beta_1 InsideToIndependen+\beta_2 ALLCOMMAUDITINDEPENDENT+\beta_3 ACSIZE+\beta_4 BOARDSIZE+\beta_5 PINDEPENDENT+\beta_6 CEOISCHAIRMAN+\beta_7 lnTA+\beta_8 ROA+\beta_9 LOSS+\beta_{10} MERGER+\beta_{11} RESTRUCTURE+\beta_{12} EXTREMEGROWTH+\beta_{13} SEGMENT+\beta_{14} FOREIGN+\beta_{15} BIG4+\beta_{16} AUDITORCHANGE+\beta_{17} LITIGATION+e$$

## 2.4 RESULTS

### 2.4.1 CEO Compensation

I start by presenting results for the compensation models. Panel A of Table 12 presents results using CEO base salary as the dependent variable, while in panel B CEO total annual cash compensation is used as the dependent variable. It is important to present two types of compensation because determinates of the two might be different and this might alter the results.[18] The first model of table 12 (column a) examines the effect of reciprocal social ties (H1a) e.g. an insider of company A serves on the board of company B and vice versa. It is important to test this hypothesis because most research and regulators' scrutiny have been made with respect to this type of social tie. As noted earlier, during 2004 and 2005 only a small fraction of companies had reciprocal ties, this reality reflects a change in corporate governance structure from the 90s. Table 12 reveals that there is no association between the existence of reciprocal social ties and CEO compensation, this finding is inconsistent with Core et al. (1999) and Hallock (1997) who find that during the 90s' this type of social ties influences compensation. The reason for that might be the change in the governance environment as evident by the sharp decrease in reciprocal social ties, hence H1a is not supported. The Second model (Column B) present tests of H1b which predicts that social ties between managers and independent board members will be associated with higher CEO compensation. The indicator variable *JustInsideToIndependent* captures all the social ties between insiders to independent board members excluding reciprocal social ties. It is important to exclude the reciprocal

[18] Because I use many control variables in the models I tested for multicollinearity. Result show that in all the models through out the paper the variance inflation factors are well below the level suggestive of multicollinearity problems. (Neter et al. 1996).

ties in order to capture the true effect of *InsideToIndependent.*[19] I observe that *JustInsideToIndependent* in Table 12 panel A (panel B) is positive and significant ($t = 2.56$; $p < 0.05$,($t = 1.39$; $p < 0.1$)), and is associated with approximately $33,770 ($81,747) increase in CEO salary (Total annual cash compensation). These results are consistent with Larcker et al. (2006) and support H1b. The third model (column C) provides tests of H2 which predict that the excess compensation will exist only in companies where management is socially tied to independent compensation committee members. The indicator variable *CompensationInsideToIndependent* (*NonCompensationInsideToIndependent*) capture a social tie that involves (does not involve) at least one independent board member who serves on the compensation committee. Results show that only *CompensationInsideToIndependent* in panel A (panel B) is positive and significant ($t = 2.99$; $p<0.000$, ($t = 2.57$; $p< 0.05$)) and is associated with 48,668$(186,208$) increase in CEO salary (Total annual cash compensation), hence H2 is supported. These results suggest that only social ties between managers and independent board members that can truly influence CEO compensation matter. Other control variables are generally consistent with previous studies (Core et al. 1999 , Larcker et al. 2006). CEOs of larger (*lnTa*), riskier (*stdROA*) and more profitable firms (*ROA*) are compensated more while CEOs' of companies with less investment opportunities (*BTM*) have lower compensation. Companies with larger boards (*BOARDSIZE)* composed of more directors over the age of 70 (*PDIRECTORSOVER70*) and in which the CEO is also the chairman of the board (*CEOISCHAIRMAN),* have higher CEO compensation. The level of board independence is positively associated with CEO compensation, which is consistent with previous research findings (Core et al. 1999). However, the independence

[19] Adding the reciprocal tie indicator instead of eliminating it from the analysis yields similar results

of the compensation committee *ALLCOMMCOMPINDEPENDENT* is negatively associated with CEOs base salary, strengthening the idea that independence might be important within the committee that can influence compensation outcomes. Both the age (*CEOAGE)* and the tenure (*CEOTENURE)* of the CEO are positive and significant. Finally, in companies in which the CEO is also the founder of the company (*CEOISFOUNDER)* and is more controlled by outside owners (*OWNERSFIVEPERCENTPCTG)* the CEO extracts less compensation.

**Table 12 - CEO Compensation and Directors-Management Ties**

**Panel A: CEO Base Salary**

| | | **A.** ***Reciprocal*** | **B.** ***JustInsideTo Independent*** | **C.** ***Compensation InsideTo Independent*** |
|---|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -556,142 (-7.8***) | -537,086 (-7.5***) | -542,290 (-7.57***) |
| *Reciprocal (H1a)* | + | -34042 (-1.15) | | |
| *JustInsideToIndependent (H1b)* | + | | 33,770 (2.56***) | |

| | | | | |
|---|---|---|---|---|
| *CompensationInsideToIndependent (H2)* | + | | | 48,668 (2.99***) |
| *NonCompensationInsideToIndependent (H2)* | + | | | -10802 (-0.62) |
| *lnTA* | + | 121,955 (38.65***) | 120,876 (37.97***) | 121,229 (38.18***) |
| *BTM* | - | -34,387 (-2.22**) | -34,280 (-2.21**) | -34,077 (-2.2**) |
| *ROA* | + | -43,314 (-0.83) | -45,694 (-0.88) | -44,964 (-0.86) |
| *stdROA* | + | 124,017 (1.9**) | 125,200 (1.92**) | 126,386 (1.94**) |
| *ALLCOMMCOMPINDEPENDENT* | - | -12,508 (-1.31*) | -12,604 (-1.33*) | -13,001 (-1.37*) |
| *BOARDSIZE* | + | 9,119.52 (4.87***) | 8,644.58 (4.6***) | 8,733.90 (4.64***) |
| *PINDEPENDENT* | ? | 149,241 (5.12***) | 145,832 (5.00***) | 148,566 (5.09***) |
| *PDIRECTORSOVER70* | + | 59,957 (1.90**) | 62,056 (1.97**) | 60,800 (1.93**) |
| *CEOISCHAIRMAN* | + | 33,592 (3.89***) | 32,818 (3.80***) | 32,907 (3.81***) |
| *CEOAGE* | + | 2,849.84 (4.81***) | 2,810.67 (4.75***) | 2,793.46 (4.73***) |
| *CEOTENURE* | + | 930.63 (1.49*) | 918.25 (1.47*) | 954.69 (1.53*) |
| *CEOISFOUNDER* | ? | -82,280 (-5.57***) | -80,649 (-5.46***) | -80,867 (-5.48***) |
| *OWNERSFIVEPERCENTPCTG* | - | -6,206.24 (-0.25) | -5,818.23 (-0.24) | -5,135.12 (-0.21) |
| *Year Indicator* | | Yes | Yes | Yes |
| *Industry indicators* | | Yes | Yes | Yes |
| *Adj-R2* | | 0.506 | 0.507 | 0.507 |
| *F-value* | | 46.93*** | 47.06*** | 46.54*** |
| *# of Companies* | | 3,498 | 3,498 | 3,498 |

**Panel B: CEO Total Annual Cash Compensation**

| | | A. *Reciprocal* | B. *JustInsideTo Independent* | C. *Compensation InsideToIndep endent* |
|---|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -2,689,553 (-8.48***) | -2,644,353 (-8.30***) | -2,650,806 (-8.33***) |
| *Reciprocal (H1a)* | + | -50598 (-0.39) | | |
| *JustInsideToIndependent (H1b)* | + | | 81,747 (1.39*) | |
| *CompensationInsideToIndependent (H2)* | + | | | 186,208 (2.57***) |
| *NonCompensationInsideToIndependent (H2)* | + | | | -92,462 (-1.19) |
| *lnTA* | + | 51,1971 (36.5***) | 509,309 (35.97***) | 509,674 (36.11***) |
| *BTM* | - | -182,280 (-2.64***) | -181,960 (-2.64***) | -181,107 (-2.63***) |
| *ROA* | + | 884,151 (3.82***) | 879,291 (3.8***) | 881,723 (3.81***) |
| *stdROA* | + | 1,543,399 (5.32***) | 1,546,989 (5.33***) | 1,555,587 (5.36***) |
| *ALLCOMMCOMPINDEPENDENT* | - | -43,269 (-1.02) | -43,209 (-1.02) | -44,635 (-1.06) |
| *BOARDSIZE* | + | 12,191 (1.46*) | 11,063 (1.32*) | 11,087 (1.33*) |
| *PINDEPENDENT* | ? | 360,698 (2.78***) | 352,341 (2.72***) | 361,888 (2.79***) |
| *PDIRECTORSOVER70* | + | -22,209 (-0.16) | -17,858 (-0.13) | -23,215 (-0.17) |
| *CEOISCHAIRMAN* | + | 157,113 (4.09***) | 155,219 (4.04***) | 154,696 (4.03***) |
| *CEOAGE* | + | 5,147.50 (1.96**) | 5,073.37 (1.93**) | 4,989.61 (1.90**) |
| *CEOTENURE* | + | 5,755.54 (2.07**) | 5,733.55 (2.06**) | 5,924.81 (2.13**) |
| *CEOISFOUNDER* | ? | -139,956 (-2.13**) | -136,340 (-2.08**) | -136,406 (-2.08**) |
| *OWNERSFIVEPERCENTPCTG* | - | -448,711 (-4.08***) | -448,287 (-4.08***) | -445,392 (-4.06***) |
| *Year Indicator* | | Yes | Yes | Yes |
| *Industry indicators* | | Yes | Yes | Yes |
| *Adj-R2* | | 0.493 | 0.494 | 0.495 |
| *F-value* | | 44.71*** | 44.76*** | 44.35*** |
| *# of Companies* | | 3498 | 3498 | 3498 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the t-test statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

### 2.4.2 Material Weaknesses and Restatements

Results for the likelihood of the existence of MWs in internal controls and restatements are presented in Tables 13 and 14 respectively. Column A of table 13 (14) test H3a (H3b), which aligned with the collaboration board model and the theory of friendly boards predict that director-management social ties will be negatively associated with *MWs (RESTATEMENTS)*. Results of the logistic regression models show that *InsideToIndependent* is negative and significant ($p<0.05$, $p<0.05$) for both *MW* and *RESTATEMENTS*, hence H3 is supported. Column B of table 13 (14) test H4a (H4b) which predict that only ties between management and board members that serve on the audit committee can influence *MWs (RESTATEMENTS)*. In both models only *AuditInsideToIndependent* is negative and significant ($p<0.01$, ($p<0.05$)), hence H4 is supported. These results reinforce the view that only social ties to board members that can influence the outcome matter. More importantly, results show that the impact of socially tied directors on processes within the company depends on the context and on specific board tasks.

**Table 13 - Logistic Regression of Material Weakness and Directors-Management Ties**

| | | **A.** ***InsideTo Independent*** | **B.** ***AuditInsideTo Independent*** |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** |
| *Intercept* | | -0.25 (0.28) | -0.23 (0.24) |
| *InsideToIndependent (H3a)* | - | -0.52 (4.26**) | |
| *AuditInsideToIndependent (H4a)* | - | | -0.93 (5.46***) |
| *NonAuditInsideToIndependent (H4a)* | - | | -0.17 (0.28) |
| *ALLCOMMAUDITINDEPENDENT* | - | -0.02 (0.02) | -0.02 (0.02) |
| *ACSIZE* | - | -0.09 (1.97*) | -0.09 (1.78*) |
| *BOARDSIZE* | + | 0.04 (1.78*) | 0.04 (1.69*) |
| *PINDEPENDENT* | - | -1.16 (6.65***) | -1.18 (6.85***) |
| *CEOISCHAIRMAN* | + | 0.08 (0.43) | 0.08 (0.42) |
| *lnTA* | - | -0.13 (7.86***) | -0.13 (8.06***) |
| *ROA* | - | -2.96 (14.69***) | -2.96 (14.66***) |
| *LOSS* | + | 0.55 (10.32***) | 0.55 (10.14***) |
| *MERGER* | + | -0.26 (3.23**) | -0.26 (3.20**) |
| *RESTRUCTURE* | + | 0.14 (1.1172) | 0.15 (1.2107) |
| *EXTREMEGROWTH* | + | 0.01 (0.00) | 0.01 (0.00) |
| *SEGMENT* | + | 0.03 (3.96**) | 0.03 (3.97**) |
| *FOREIGN* | + | 0.31 (5.81***) | 0.31 (5.70***) |
| *BIG4* | + | -0.29 (1.37) | -0.29 (1.33) |
| *AUDITORCHANGE* | + | 0.71 (10.31***) | 0.71 (10.22***) |
| *LITIGATION* | + | -0.07 (0.21) | -0.08 (0.23) |
| *Year Indicator* | | yes | Yes |
| *LIKELIHOOD RATIO* $\chi 2$ | - | 166.66*** | 169.07*** |
| *WALD* $\chi 2$ | | 162.24*** | 163.09*** |

| | | | |
|---|---|---|---|
| *PSEUDO $R^2$* | | 0.055 | 0.057 |
| *# of Companies* | | 2956 | 2956 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the Wald Chi-squared statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in Previous Tables

## Table 14 - Logistic Regression of Restatements and Directors-Management Ties

| | | **A.** ***InsideTo Independent*** | **B.** ***AuditInsideTo Independent*** |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** |
| *Intercept* | | -1.25 (10.79***) | -1.25 (10.64***) |
| *InsideToIndependent (H3b)* | - | -0.37 (4.11**) | |
| *AuditInsideToIndependent (H4b)* | - | | -0.46 (3.51**) |
| *NonAuditInsideToIndependent (H4b)* | - | | -0.26 (1.09) |
| *ALLCOMMAUDITINDEPENDENT* | - | 0.20 (2.20) | 0.20 (2.23) |
| *ACSIZE* | - | -0.101 (3.59**) | -0.099 (3.46**) |
| *BOARDSIZE* | + | 0 (0) | 0 (0) |
| *PINDEPENDENT* | - | -0.89 (5.96***) | -0.90 (6.04***) |
| *CEOISCHAIRMAN* | + | 0.30 (8.45***) | 0.30 (8.34***) |
| *lnTA* | - | 0.07 (3.75) | 0.07 (3.68) |
| *ROA* | - | -1.24 (3.41**) | -1.24 (3.42**) |
| *LOSS* | + | 0.525 (13.27***) | 0.52 (13.09***) |
| *MERGER* | + | -0.05 (0.19) | -0.05 (0.19) |
| *RESTRUCTURE* | + | 0.17 (2.19*) | 0.17 (2.23*) |
| *EXTREMEGROWTH* | + | 0.26 (3.19**) | 0.26 (3.20**) |

**Table 14 (Continued) -Logistic Regression of Restatements and Directors-Management Ties**

| | | | |
|---|---|---|---|
| *SEGMENT* | + | -0.02<br>(2.77**) | -0.02<br>(2.73**) |
| *FOREIGN* | + | -0.12<br>(1.23) | -0.12<br>(1.26) |
| *BIG4* | + | -0.17<br>(0.60) | -0.17<br>(0.62) |
| *AUDITORCHANGE* | + | 0.22<br>(1.22) | 0.22<br>(1.21) |
| *LITIGATION* | + | 0.56<br>(25.69***) | 0.56<br>(25.59***) |
| *Year Indicator* | | Yes | Yes |
| *LIKELIHOOD RATIO* $\chi 2$ | - | 194.56*** | 194.89*** |
| *WALD* $\chi 2$ | | 180.49*** | 180.74*** |
| *PSEUDO* $R^2$ | | 0.0537 | 0.0538 |
| *# of Companies* | | 3,525 | 3,525 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the Wald Chi-squared statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

While the compensation analysis results are consistent with previous beliefs that social ties do lead to undesirable higher compensation the financial reporting quality results also show that these social ties contribute to higher quality internal controls and financial reports. Other control variables are consistent with what was found in previous literature.

## 2.5 SENSITIVITY TESTS AND ADDITIONAL ANALYSIS

### 2.5.1 Firm Size Proxies

Firm size is associated both with CEO compensation and with the quality of the financial reports. The use of different size proxies can affect the results in various ways. In order to examine the robustness of my results I repeat my analyses replacing the natural log of total assets with either the market value of equity or total sales. I re-estimate 11 additional models for each dependent variable using the linear, the natural

log, the square root or the squared value, of each of the three firm's size proxies. Results indicate (not tabulated) that in all of the base salary and total annual compensation models, the existence of a social tie between management and independent compensation committee members remains positively and highly significant ($p<0.01$). Further, in all of the MWs and restatements models the existence of a social ties between management and audit committee members also remains negative and significant ($p<0.01$ and $p<0.05$) respectively.[20] An additional proxy for the size of the firm is the number of employees the firm has. Thus, I estimate 4 additional models for each dependent variable using the linear, the natural log, the square root or the squared value of the number of employees. Panel A and Panel B of table 15 shows the results of the base salary and total annual cash compensation models, respectively. Results indicate that the number of employees is positively associated with CEO compensation. Table 16 and Table 17 show results for the MWs and Restatement models respectively. Interestingly, in this case I find that for some specifications the number of employees is positively associated with the likelihood of disclosing a MW or restating the financial reports. One possible explanation is that beside firm size, number of employees also captures firm complexity which increases the likelihood of having problems in internal controls or in the financial reports. In both the compensation models and financial reporting quality models, social ties remain significant.

[20] Using the squared root of the market value of equity in the MWs model yields results that are significant at the 5% level.

**Table 15 - CEO Compensation, Directors-Management Ties and #of Employees**

**Panel A: CEO Base Salary**

| | | **A.** ***#Employee*** | **B.** ***LN#Employee*** | **C.** ***#EmployeeRoot*** | **D.** ***#Employee Squared*** |
|---|---|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -535449 (-7.49***) | -622263 (-8.77***) | -447604 (-6.25***) | -547839 (-7.66***) |
| *CompensationInsideToIndependent (H2)* | + | 49868 (3.06***) | 47674 (2.96***) | 49413 (3.06***) | 49767 (3.05***) |
| *NonCompensationInsideToIndependent (H2)* | + | -10879 (-0.62) | -9431.99 (-0.55) | -10789 (-0.62) | -10558 (-0.6) |
| *#Employee* | + | 0.28 (3.27***) | | | |
| *LN#Employee* | + | | 39090 (9.54***) | | |

| | | | | | |
|---|---|---|---|---|---|
| *#EmployeeRoot* | + | | | 576.17 (8.61***) | |
| *#EmployeeSquared* | + | | | | 0.00 (0.16) |
| *lnTA* | + | 116778 (34.39***) | 90814 (20.6***) | 98109 (24.1***) | 120678 (37.75***) |
| *BTM* | - | -31034 (-2.00**) | -20410 (-1.33) | -25104 (-1.63) | -32085 (-2.06**) |
| *ROA* | + | -39746 (-0.76) | -56277 (-1.09) | -35639 (-0.69) | -42845 (-0.82) |
| *stdROA* | + | 120537 (1.84*) | 145185 (2.24**) | 106447 (1.64) | 124962 (1.91*) |
| *ALLCOMMCOMPINDEPENDENT* | - | -12409 (-1.31) | -11172 (-1.19) | -12604 (-1.34) | -11982 (-1.26) |
| *BOARDSIZE* | + | 8980.836 (4.78***) | 7052.54 (3.77***) | 8212.42 (4.4***) | 9120.75 (4.85***) |
| *PINDEPENDENT* | ? | 150137 (5.15***) | 131345 (4.55***) | 140807 (4.88***) | 148692 (5.09***) |
| *PDIRECTORSOVER70* | + | 58380 (1.85*) | 56142 (1.8*) | 64126 (2.05**) | 55459 (1.76*) |
| *CEOISCHAIRMAN* | + | 33740 (3.92***) | 32644 (3.83***) | 32217 (3.77***) | 33775 (3.91***) |
| *CEOAGE* | + | 2843 (4.82***) | 2694.44 (4.62***) | 2667.90 (4.56***) | 2891.99 (4.89***) |
| *CEOTENURE* | + | 963.14 (1.55) | 851.42 (1.38) | 1115.09 (1.8*) | 898.25 (1.44) |
| *CEOISFOUNDER* | ? | -77644 (-5.27***) | -67954 (-4.66***) | -73259 (-5.02***) | -78107 (-5.3***) |
| *OWNERSFIVEPERCENTPCTG* | - | -3033.653 (-0.12) | -11476 (-0.47) | 1532.19 (0.06) | -6401.37 (-0.26) |
| *Year Indicator* | | Yes | Yes | Yes | Yes |
| *Industry indicators* | | Yes | Yes | Yes | Yes |
| *Adj-R2* | | 0.5094 | 0.521 | 0.519 | 0.507 |
| *F-value* | | 46.20*** | 48.36*** | 47.92*** | 45.92*** |
| *# of Companies* | | 3,483 | 3,479 | 3,479 | 3,483 |

## Panel B: CEO Total Annual Cash Compensation

| | | **A. *#Employee*** | **B. *LN#Employee*** | **C. *#EmployeeRoot*** | **D. *#EmployeeSquared*** |
|---|---|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -2541681 (-8.11***) | -2849990 (-9.00***) | -2116284 (-6.72***) | -2665387 (-8.46***) |

| | | | | | |
|---|---|---|---|---|---|
| *CompensationInsideToIndependent (H2)* | + | 191824 (2.69***) | 185803 (2.58***) | 184609 (2.60***) | 193863 (2.70***) |
| *NonCompensationInsideToIndependent (H2)* | + | -92685 (-1.21) | -86458 (-1.12) | -90518 (-1.19) | -89268 (-1.16) |
| *#Employee* | + | 2.998 (7.99***) | | | |
| *LN#Employee* | + | | 92316 (5.05***) | | |
| *#EmployeeRoot* | + | | | 3204.21 (10.89***) | |
| *#EmployeeSquared* | + | | | | 0 (3.85***) |
| *lnTA* | + | 466000 (31.30***) | 437965 (22.25***) | 384020 (21.47***) | 502580 (35.66***) |
| *BTM* | - | -158700 (-2.33**) | -144759 (-2.11**) | -139532 (-2.06**) | -164668 (-2.4**) |
| *ROA* | + | 928724 (4.07***) | 860755 (3.74***) | 930428 (4.1***) | 901157 (3.92***) |
| *stdROA* | + | 1476813 (5.15***) | 1579772 (5.45***) | 1467034 (5.14***) | 1513787 (5.25***) |
| *ALLCOMMCOMPINDEPENDENT* | - | -42573 (-1.02) | -36086 (-0.86) | -41921 (-1.01) | -38538 (-0.92) |
| *BOARDSIZE* | + | 10130 (1.23) | 6568.33 (0.79) | 5753.73 (0.70) | 11597 (1.40) |
| *PINDEPENDENT* | ? | 372884 (2.92***) | 316594 (2.46**) | 319090 (2.51**) | 373121 (2.90***) |
| *PDIRECTORSOVER70* | + | -24387 (-0.18) | -56088 (-0.4) | -12195 (-0.09) | -44709 (-0.32) |
| *CEOISCHAIRMAN* | + | 158319 (4.19***) | 155779 (4.1***) | 148595 (3.96***) | 162314 (4.27***) |
| *CEOAGE* | + | 4971.26 (1.92*) | 4987.037 (1.91*) | 4055.90 (1.58) | 5409.79 (2.08**) |
| *CEOTENURE* | + | 6498.39 (2.38**) | 5739.12 (2.09**) | 7242.08 (2.67***) | 5806.48 (2.11**) |
| *CEOISFOUNDER* | ? | -121185 (-1.88*) | -102445 (-1.57) | -99747 (-1.56) | -125266 (-1.93*) |
| *OWNERSFIVEPERCENTPCTG* | - | -400893 (-3.70***) | -445805 (-4.08***) | -378870 (-3.51***) | -426297 (-3.91***) |
| *Year Indicator* | | Yes | Yes | Yes | Yes |
| *Industry indicators* | | Yes | Yes | Yes | Yes |
| *Adj-R2* | | 0.507 | 0.502 | 0.515 | 0.500 |
| *F-value* | | 45.92*** | 44.89*** | 47.27*** | 44.87*** |
| *# of Companies* | | 3,483 | 3,483 | 3,479 | 3,483 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the t-test statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

**Table 16- Logistic Regression of Material Weakness, Directors-Management Ties and #of Employees**

| | | **A.** ***#Employee*** | **B.** ***LN#Employee*** | **C.** ***#EmployeeRoot*** | **D.** ***#EmployeeSquared*** |
|---|---|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** |
| *Intercept* | | -0.10 (0.04) | -0.461 (0.87) | 0.16 (0.10) | -0.22 (0.21) |
| *AuditInsideToIndependent (H4a)* | - | -1.05 (6.17***) | -1.07 (6.38***) | -1.06 (6.25***) | -1.06 (6.19***) |
| *NonAuditInsideToIndependent (H4a)* | - | -0.17 (0.28) | -0.139 (0.18) | -0.15 (0.24) | -0.16 (0.25) |
| *#Employee* | - | 0 (2.03) | | | |
| *LN#Employee* | - | | 0.102 (3.81*) | | |
| *#EmployeeRoot* | - | | | 0.00 (5.35**) | |
| *#EmployeeSquared* | - | | | | 0 (0.02) |
| *ALLCOMMAUDITINDEPENDENT* | - | -0.02 (0.030) | -0.051 (0.09) | -0.05 (0.098) | -0.02 (0.03) |
| *ACSIZE* | - | -0.08 (1.52) | -0.08 (1.7366*) | -0.08 (1.77*) | -0.07 (1.51) |
| *BOARDSIZE* | + | 0.03 (1.57) | 0.02 (0.86) | 0.03 (1.15) | 0.03 (1.54) |
| *PINDEPENDENT* | - | -1.13 (6.29***) | -1.08 (5.70***) | -1.09 (5.78***) | -1.13 (6.31***) |
| *CEOISCHAIRMAN* | + | 0.08 (0.45) | 0.07 (0.30) | 0.07 (0.37) | 0.087 (0.46) |
| *lnTA* | - | -0.15 (9.72***) | -0.19 (11.44***) | -0.19 (12.35***) | -0.14 (8.25***) |
| *ROA* | - | -2.91 (14.07***) | -3.13 (15.88***) | -3.01 (14.97***) | -2.91 (13.98***) |
| *LOSS* | + | 0.52 (9.35***) | 0.51 (8.84***) | 0.51 (8.92***) | 0.52 (9.38***) |
| *MERGER* | + | -0.25 (2.98**) | -0.26 (3.33**) | -0.26 (3.149**) | -0.25 (3.09**) |
| *RESTRUCTURE* | + | 0.13 (1.02) | 0.08 (0.39) | 0.095 (0.4609) | 0.153 (1.24) |
| *EXTREMEGROWTH* | + | 0.00 (0.00) | 0.07 (0.16) | 0.05 (0.08) | -0.00 (0.00) |
| *SEGMENT* | + | 0.02 (3.95**) | 0.02 (2.46*) | 0.021 (2.81**) | 0.02 (4.17**) |

| | | | | | |
|---|---|---|---|---|---|
| *FOREIGN* | + | 0.26 (4.15**) | 0.25 (3.97**) | 0.26 (4.22**) | 0.26 (4.18**) |
| *BIG4* | + | -0.31 (1.54) | -0.35 (1.97*) | -0.32 (1.60) | -0.31 (1.57) |
| *AUDITORCHANGE* | + | 0.71 (10.24***) | 0.69 (9.61***) | 0.70 (9.99***) | 0.71 (10.29***) |
| *LITIGATION* | + | -0.09 (0.32) | -0.105 (0.44) | -0.11 (0.5533) | -0.07 (0.20) |
| *Year Indicator* | | Yes | yes | yes | yes |
| *LIKELIHOOD RATIO* $\chi 2$ | - | 164.67*** | 166.50*** | 167.41*** | 163.09*** |
| *WALD* $\chi 2$ | | 158.51*** | 159.61*** | 160.59*** | 157.09*** |
| *PSEUDO* $R^2$ | | 0.054 | 0.055 | 0.055 | 0.053 |
| *# of Companies* | | 2947 | 2939 | 2939 | 2947 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the Wald Chi-squared statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in Previous Tables

## Table 17 - Logistic Regression of Restatements, Directors-Management Ties and #of Employees

| | | **A. *#Employee*** | **B. *LN#Employee*** | **C. *#EmployeeRoot*** | **D. *#EmployeeSquared*** |
|---|---|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (Wald Chi-Square)*** | | | ***Coefficient (Wald Chi-Square)*** |
| *Intercept* | | -1.18 (9.14***) | -1.66 (17.14***) | -0.80 (3.90**) | -1.30 (11.43***) |
| *AuditInsideToIndependent (H4b)* | - | -0.43 (3.12**) | -0.46 (3.44**) | -0.44 (3.26**) | -0.44 (3.16**) |
| *NonAuditInsideToIndependent (H4b)* | - | -0.24 (0.90) | -0.20 (0.64) | -0.22 (0.80) | -0.24 (0.90) |
| *#Employee* | - | 0 .00 (1.98) | | | |
| *LN#Employee* | - | | 0.15 (13.27***) | | |

| | | | | | |
|---|---|---|---|---|---|
| *#EmployeeRoot* | - | | | 0.00 (13.31***) | |
| *#EmployeeSquared* | - | | | | 0 (0.28) |
| *ALLCOMMAUDITINDEPENDENT* | - | 0.21 (2.53*) | 0.18 (1.75*) | 0.18 (1.81*) | 0.22 (2.60*) |
| *ACSIZE* | - | -0.09 (3.37**) | -0.11 (4.24**) | -0.10 (4.07**) | -0.10 (3.49**) |
| *BOARDSIZE* | + | -0.00 (0.03) | -0.01 (0.38) | -0.01 (0.20) | -0.00 (0.01) |
| *PINDEPENDENT* | - | -0.88 (5.75***) | -0.82 (4.97**) | -0.81 (4.81**) | -0.90 (6.04***) |
| *CEOISCHAIRMAN* | + | 0.30 (8.37***) | 0.27 (6.73***) | 0.29 (7.419***) | 0.30 (8.23***) |
| *lnTA* | - | 0.05 (2.34*) | -0.00 (0.00) | 0.004 (0.00) | 0.07 (4.25**) |
| *ROA* | - | -1.27 (3.56**) | -1.58 (5.43***) | -1.41 (4.41**) | -1.23 (3.33**) |
| *LOSS* | + | 0.52 (12.98***) | 0.51 (12.72***) | 0.51 (12.59***) | 0.52 (13.20***) |
| *MERGER* | + | -0.04 (0.17) | -0.05 (0.24) | -0.05 (0.21) | -0.04 (0.17) |
| *RESTRUCTURE* | + | 0.17 (2.25*) | 0.09 (0.71) | 0.12 (1.10) | 0.18 (2.55*) |
| *EXTREMEGROWTH* | + | 0.24 (2.76**) | 0.34 (5.02**) | 0.30 (4.06**) | 0.23 (2.50*) |
| *SEGMENT* | + | -0.01 (3.14**) | -0.02 (5.49***) | -0.02 (4.57**) | -0.01 (3.08**) |
| *FOREIGN* | + | -0.12 (1.29) | -0.12 (1.31) | -0.12 (1.24) | -0.12 (1.27) |
| *BIG4* | + | -0.14 (0.41) | -0.19 (0.74) | -0.14 (0.42) | -0.14 (0.43) |
| *AUDITORCHANGE* | + | 0.24 (1.42) | 0.22 (1.16) | 0.23 (1.34) | 0.24 (1.46) |
| *LITIGATION* | + | 0.55 (23.75***) | 0.49 (18.24***) | 0.48 (17.57***) | 0.58 (26.99***) |
| *Year Indicator* | | Yes | Yes | Yes | Yes |
| *LIKELIHOOD RATIO $\chi 2$* | | 195.84*** | 208.25*** | 207.70*** | 194.26*** |
| *WALD $\chi 2$* | | 181.76*** | 192.24*** | 191.72*** | 180.25*** |
| *PSEUDO $R^2$* | | 0.054 | 0.057 | 0.057 | 0.053 |
| *# of Companies* | | 3511 | 3502 | 3502 | 3511 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the Wald Chi-squared statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

### 2.5.2 Quadratic Specifications for the Size of the Board of Directors and for Other Control Variables

Following the literature, control variables that are included in my models are in a linear form. However, some control variables can have a U-shape behavior. For example the size of the board can be associated with poor governance for extremely large or small boards, thus the optimal board size is in the middle. Similarly the age of the CEO and the tenure of the CEO can also have a U-shape behavior. Thus to control for this possibility I include, in addition to the linear specification, a quadratic specification for board size, CEO age and CEO tenure. Table 18 shows results for the compensation models and table 19 shows results for the financial reporting quality models. For all models my main results do not change.

**Table 18–CEO Compensation, Including Quadratic Specifications for Control variables and Directors-Management Ties**

| | | **A.** ***Base salary*** | **B.** ***Total annual cash compensation*** |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -729368 (-4.50***) | -4402981 (-6.11***) |

| | | | |
|---|---|---|---|
| *CompensationInsideToIndependent (H2)* | + | 48509 (2.98***) | 185779 (2.57***) |
| *CompensationInsideToIndependent (H2)* | + | -11664 (-0.67) | -93218 (-1.20) |
| *lnTA* | + | 120867 (37.56***) | 510774 (35.73***) |
| *BTM* | - | -32924 (-2.12**) | -171717 (-2.49***) |
| *ROA* | + | -43947 (-0.84) | 892912 (3.86***) |
| *stdROA* | + | 136946 (2.09**) | 1597088 (5.49***) |
| *ALLCOMMCOMPINDEPENDENT* | - | -12566 (-1.32*) | -43558 (-1.03) |
| *BOARDSIZE* | + | 17829 (2.48***) | 3507.18 (0.11) |
| *BOARDSIZESQUARED* | + | -422.88 (-1.33) | 282.806 (0.20) |
| *PINDEPENDENT* | ? | 145515 (4.98***) | 344639 (2.66***) |
| *PDIRECTORSOVER70* | + | 69684 (2.16**) | 65134 (0.45) |
| *CEOISCHAIRMAN* | + | 30692 (3.47***) | 154047 (3.92***) |
| *CEOAGE* | + | 7965.746 (1.49*) | 70236 (2.95***) |
| *CEOAGESQUARED* | + | -46.47 (-0.96) | -589.53 (-2.75***) |
| *CEOTENURE* | + | 2414.671 (1.78**) | 6161.90 (1.02) |
| *CEOTENURESQUARED* | + | -39.893 (-1.03) | 44.337 (0.26) |
| *CEOISFOUNDER* | ? | -81680 (-5.52***) | -141184 (-2.15**) |
| *OWNERSFIVEPERCENTPCTG* | - | -7384.23 (-0.30) | -462645 (-4.21***) |
| *Year Indicator* | | Yes | Yes |
| *Industry indicators* | | Yes | Yes |
| *Adj-R2* | | 0.51 | 0.50 |
| *F-value* | | 44.92*** | 42.89*** |
| *# of Companies* | | 3498 | 3498 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the t-test statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

**Table 19- Logistic Regression of Material Weakness and Restatements, Directors-Management Ties and Quadratic Specification for Board Size**

| | | A. *MW* | B. *RESTATEMENTS* |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** |
| *Intercept* | | -0.65 (0.93) | -1.386 (7.11***) |
| *AuditInsideToIndependent (H4a)* | - | -0.93 (5.49***) | -0.46 (3.52**) |
| *NonAuditInsideToIndependent (H4a)* | - | -0.18 (0.31) | -0.26 (1.10) |
| *ALLCOMMAUDITINDEPENDENT* | - | -0.02 (0.02) | 0.20 (2.22*) |
| *ACSIZE* | - | -0.09 (1.95*) | -0.10 (3.55**) |
| *BOARDSIZE* | + | 0.13 (1.40) | 0.03 (0.13) |
| *BOARDSIZESQUARED* | + | -0.00 (0.75) | -0.00 (0.14) |
| *PINDEPENDENT* | - | -1.18 (6.91***) | -0.90 (6.06***) |
| *CEOISCHAIRMAN* | + | 0.09 (0.51) | 0.30 (8.433***) |
| *lnTA* | - | -0.14 (8.60***) | 0.06 (3.42**) |
| *ROA* | - | -2.99 (14.92***) | -1.25 (3.47**) |
| *LOSS* | + | 0.54 (10.03***) | 0.52 (13.04***) |
| *MERGER* | + | -0.25 (3.06**) | -0.04 (0.17) |
| *RESTRUCTURE* | + | 0.14 (1.09) | 0.16 (2.15*) |
| *EXTREMEGROWTH* | + | 0.01 (0.00) | 0.26 (3.23**) |
| *SEGMENT* | + | 0.02 (3.52**) | -0.01 (2.81**) |
| *FOREIGN* | + | 0.31 (5.93***) | -0.12 (1.22) |
| *BIG4* | + | -0.30 (1.47) | -0.18 (0.66) |
| *AUDITORCHANGE* | + | 0.71 (10.24***) | 0.22 (1.21) |
| *LITIGATION* | + | -0.07 (0.25) | 0.56 (25.57***) |
| *Year Indicator* | | Yes | yes |

| | | | |
|---|---|---|---|
| *LIKELIHOOD RATIO $\chi 2$* | - | 169.93*** | 166.50*** |
| *WALD $\chi 2$* | | 163.67*** | 159.61*** |
| *PSEUDO $R^2$* | | 0.056 | 0.055 |
| *# of Companies* | | 2956 | 3525 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the Wald Chi-squared statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in Previous Tables

### 2.5.3 Lag Analysis

While I believe that current social ties affect both executive compensation and the quality of the financial reports it is still possible that social ties from prior years also have an effect on current year activities. Hence, I create one and two years lag values for the social ties indicators and examine whether these lag values are associated with the dependent variables. Table 20 panel A and B indicates that the one year lag social tie with compensation committee members is positive and marginally significant ($p<0.1$), both for salary and total annual cash compensation. The two years lag value is significant only for the total annual cash compensation ($p<0.05$). This suggests that for compensation, prior social ties have marginal influence. Table 21 and table 22 show results for the MWs and restatement models, the tables indicates that both the one and two years lag of social ties with the audit committee are negative and significant ($p<0.05$). This suggests that maintaining a system of good internal controls and good quality financial reports is affected by social ties from prior years.[21]

[21] Since I do not have a complete set of lag values for my entire sample, the number of observations vary by analysis. The one and two lags compensation samples contain 3,085 and 2,640 observations respectively. The one and two lags MWs samples contain 2,624 and 2,219 observations respectively. The one and two lags restatements samples contain 3,105 and 2,657 observations respectively

**Table 20 - CEO Compensation, Lag Directors-Management Ties**

**Panel A: CEO Base Salary**

| | | **A.** ***LAG1YEAR*** | **B.** ***LAG2YEAR*** |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -541974 (-7.08***) | -554283 (-7.01***) |
| *Lag1CompensationInsideToIndependent (H2)* | + | 25416 (1.50*) | |
| *Lag1CompensationInsideToIndependent (H2)* | + | 4872.39 (0.26) | |
| *Lag2CompensationInsideToIndependent (H2)* | | | 13990 (0.82) |
| *Lag2CompensationInsideToIndependent (H2)* | | | 14169 (0.72) |
| *lnTA* | + | 120185 (34.94***) | 123726 (33.98***) |
| *BTM* | - | -35780 (-2.08**) | -52398 (-2.81***) |
| *ROA* | + | 16481 (0.28) | -12547 (-0.20) |
| *stdROA* | + | 176958 (2.40***) | 126665 (1.60*) |
| *ALLCOMMCOMPINDEPENDENT* | - | -20803 (-1.99**) | -26281 (-2.37***) |
| *BOARDSIZE* | + | 9072.65 (4.44***) | 7624.51 (3.52***) |
| *PINDEPENDENT* | ? | 149521 (4.68***) | 139450 (4.03***) |
| *PDIRECTORSOVER70* | + | 53741 (1.57*) | 27025 (0.74) |
| *CEOISCHAIRMAN* | + | 37137 (3.95***) | 36547 (3.67***) |
| *CEOAGE* | + | 2885.44 (4.46***) | 3425.67 (4.92***) |
| *CEOTENURE* | + | 1083.24 (1.60*) | 1479.61 (2.06**) |
| *CEOISFOUNDER* | ? | -95152 (-5.86***) | -110648 (-6.30***) |
| *OWNERSFIVEPERCENTPCTG* | - | -20029 (-0.75) | -21919 (-0.74) |
| *Year Indicator* | | Yes | Yes |
| *Industry indicators* | | Yes | Yes |
| *Adj-R2* | | 0.49 | 0.53 |
| *F-value* | | 39.99*** | 39.64*** |
| *# of Companies* | | 3085 | 2640 |

**Panel B: CEO Total Annual Cash Compensation**

| | | A. *LAG1YEAR* | B. *LAG2YEAR* |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -2728226 (-8.03***) | -2628523 (-7.40***) |
| *Lag1CompensationInsideToIndependent (H2)* | + | 111317 (1.48*) | |
| *Lag1CompensationInsideToIndependent (H2)* | + | -81434 (-0.98) | |
| *Lag2CompensationInsideToIndependent (H2)* | | | 155625 (2.02**) |
| *Lag2CompensationInsideToIndependent (H2)* | | | -18557 (-0.21) |
| *lnTA* | + | 518629 (33.98***) | 521795 (31.88***) |
| *BTM* | - | -204730 (-2.68***) | -286294 (-3.42***) |
| *ROA* | + | 1072788 (4.15***) | 940430 (3.35***) |
| *stdROA* | + | 1641318 (5.01***) | 1383435 (3.89***) |
| *ALLCOMMCOMPINDEPENDENT* | - | -45875 (-0.99) | -63364 (-1.27) |
| *BOARDSIZE* | + | 10657 (1.18) | 10389 (1.07) |
| *PINDEPENDENT* | ? | 387045 (2.73***) | 252485 (1.62*) |
| *PDIRECTORSOVER70* | + | 37009 (0.24) | -11926 (-0.07) |
| *CEOISCHAIRMAN* | + | 166814 (4.00***) | 176352 (3.94***) |
| *CEOAGE* | + | 6104.07 (2.12**) | 7687.45 (2.46***) |
| *CEOTENURE* | + | 6372.85 (2.13**) | 5553.10 (1.72**) |
| *CEOISFOUNDER* | ? | -190434 (-2.64***) | -249564 (-3.16***) |
| *OWNERSFIVEPERCENTPCTG* | - | -409514 (-3.44***) | -416102 (-3.13***) |
| *Year Indicator* | | Yes | Yes |
| *Industry indicators* | | Yes | Yes |
| *Adj-R2* | | 0.50 | 0.39 |
| *F-value* | | 40.63*** | 52.69*** |
| *# of Companies* | | 3085 | 2640 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the t-test statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

**Table 21- Logistic Regression of Material Weakness and Lag Directors-Management Ties**

| | | **A.** ***LAG1YEAR*** | **B.** ***LAG2YEAR*** |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** |
| *Intercept* | | -1.06 (4.61**) | -1.09 (3.83**) |
| *Lag1AuditInsideToIndependent (H4a)* | - | -0.92 (5.42***) | |
| *Lag1NonAuditInsideToIndependent (H4a)* | - | -0.23 (0.45) | |
| *Lag2AuditInsideToIndependent (H4a)* | - | | -0.61 (2.90**) |
| *Lag2NonAuditInsideToIndependent (H4a)* | - | | -0.66 (2.26*) |
| *ALLCOMMAUDITINDEPENDENT* | - | 0.00 (0.00) | -0.25 (1.72*) |
| *ACSIZE* | - | -0.09 (1.94*) | -0.16 (4.70**) |
| *BOARDSIZE* | + | -0.00 (0.02) | 0.02 (0.59) |
| *PINDEPENDENT* | - | -1.16 (5.69***) | -0.81 (2.10*) |
| *CEOISCHAIRMAN* | + | 0.01 (0.00) | 0.06 (0.16) |
| *lnTA* | - | -3.29 (14.85***) | -3.27 (11.97***) |
| *ROA* | - | 0.65 (13.17***) | 0.79 (15.73***) |
| *LOSS* | + | -0.24 (2.36*) | -0.21 (1.46) |
| *MERGER* | + | 0.16 (1.25) | 0.12 (0.58) |
| *RESTRUCTURE* | + | 0.04 (0.05) | -0.19 (0.58) |
| *EXTREMEGROWTH* | + | 0.03 (5.71***) | 0.035 (6.59***) |
| *SEGMENT* | + | 0.19 (1.94*) | 0.20 (1.86*) |
| *FOREIGN* | + | -0.21 (0.53) | -0.33 (1.02) |
| *BIG4* | + | 0.43 (2.87**) | 0.46 (2.75**) |
| *AUDITORCHANGE* | + | -0.08 | -0.28 |

| | | | |
|---|---|---|---|
| | | (0.26) | (2.11*) |
| *LITIGATION* | + | 0.00<br>(0.00) | -0.61<br>(2.90**) |
| *Year Indicator* | | Yes | yes |
| *LIKELIHOOD RATIO $\chi 2$* | - | 133.09*** | 128.21*** |
| *WALD $\chi 2$* | | 131.85*** | 125.20*** |
| *PSEUDO $R^2$* | | 0.049 | 0.056 |
| *# of Companies* | | 2624 | 2219 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the Wald Chi-squared statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in Previous Tables

## Table 22- Logistic Regression of Restatements and Lag Directors-Management Ties

| | | **A.** ***LAG1YEAR*** | **B.** ***LAG2YEAR*** |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** |
| *Intercept* | | -1.42<br>(11.76***) | -1.40<br>(8.76***) |
| *Lag1AuditInsideToIndependent (H4b)* | - | -0.42<br>(2.74**) | |
| *Lag1NonAuditInsideToIndependent (H4b)* | - | -0.06<br>(0.054) | |
| *Lag2AuditInsideToIndependent (H4b)* | - | | -0.37<br>(2.17**) |
| *Lag2NonAuditInsideToIndependent (H4b)* | - | | -0.40<br>(1.59) |
| *ALLCOMMAUDITINDEPENDENT* | - | 0.19<br>(1.79*) | 0.18<br>(1.25) |
| *ACSIZE* | - | -0.08<br>(2.44*) | -0.11<br>(3.26**) |
| *BOARDSIZE* | + | 0.02<br>(1.20) | 0.02<br>(1.29) |
| *PINDEPENDENT* | - | -0.68<br>(2.90**) | -0.72<br>(2.53*) |
| *CEOISCHAIRMAN* | + | 0.33<br>(8.49***) | 0.35<br>(8.00***) |
| *lnTA* | - | -1.26<br>(2.95**) | -1.36<br>(2.80**) |
| *ROA* | - | 0.56<br>(13.64***) | 0.53<br>(10.00***) |
| *LOSS* | + | -0.04<br>(0.14) | -0.06<br>(0.25) |
| *MERGER* | + | 0.17<br>(2.14*) | 0.12<br>(0.85) |
| *RESTRUCTURE* | + | 0.29 | 0.22 |

| | | | |
|---|---|---|---|
| | | (3.31**) | (1.42) |
| *EXTREMEGROWTH* | + | -0.01<br>(1.79*) | -0.01<br>(1.37) |
| *SEGMENT* | + | -0.19<br>(2.79**) | -0.14<br>(1.26) |
| *FOREIGN* | + | 0.09<br>(0.11) | 0.19<br>(0.36) |
| *BIG4* | + | -0.01<br>(0.00) | -0.11<br>(0.21) |
| *AUDITORCHANGE* | + | 0.48<br>(15.91***) | 0.46<br>(12.19***) |
| *LITIGATION* | + | 0.19<br>(1.79*) | -0.37<br>(2.17*) |
| *Year Indicator* | | Yes | Yes |
| *LIKELIHOOD RATIO* $\chi 2$ | | 157.64*** | 139.99*** |
| *WALD* $\chi 2$ | | 148.53*** | 130.06*** |
| *PSEUDO* $R^2$ | | 0.049 | 0.051 |
| *# of Companies* | | 3105 | 2657 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the Wald Chi-squared statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

### 2.5.4 Other Compensation Structure

My main analysis focuses on CEO base salary and CEO total annual cash compensation. However, CEO compensation is also composed of other components. Therefore, I also examine how social ties with the compensation committee relate to total CEO compensation and to the Black-Scholes stock options value granted to the CEO. These compensation components are available in the corporate library database only for fiscal year 2005. Using 1,737 companies with available data, table 23 shows that having a social tie with compensation committee members is associated with an increase of $1,120,333 and $860,442 in total compensation and stock option value, respectively. These increases are significant at the 5% and 1% respectively. These results suggest that social ties with compensation committee members affect both incentive and non-incentive compensation. I continue by examining whether companies with social ties to the compensation committee, provide different compensation structure. I create the following ratios: base salary divided by total annual cash compensation, base salary divided by total compensation, total annual cash compensation divided by total compensation and stock options divided by total compensation. Results indicate (not tabulated) that only the ratio of base salary to total annual cash compensation is negative and marginally significant ($p<0.1$), suggesting that, for most part, compensation structures do not differ among companies with or without social ties.

**Table 23 – Total CEO Compensation, Black-Scholes stock options value and Directors-Management Ties**

| | | A. *Total Compensation* | B. *Stock Options* |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -14807461 (-5.54***) | -5397982 (-3.72***) |
| *CompensationInsideToIndependent (H2)* | + | 1,120,333 (1.87**) | 860442 (2.65***) |
| *CompensationInsideToIndependent (H2)* | + | 644152 (1.00) | 777778 (2.23**) |
| *lnTA* | + | 1932326 (16.46***) | 828362 (12.98***) |
| *BTM* | - | -2103289 (-3.75***) | -954417 (-3.13***) |
| *ROA* | + | 8305570 (4.46***) | 2012672 (1.99**) |
| *stdROA* | + | 7022682 (2.84***) | 3480109 (2.59***) |
| *ALLCOMMCOMPINDEPENDENT* | - | -158574 (-0.43) | -16760 (-0.08) |
| *BOARDSIZE* | + | -68476 (-0.96) | -70909 (-1.82**) |
| *PINDEPENDENT* | ? | 1681077 (1.52*) | -65982 (-0.11) |
| *PDIRECTORSOVER70* | + | 185564 (0.16) | -846615 (-1.33*) |
| *CEOISCHAIRMAN* | + | 582474 (1.83**) | 232753 (1.34*) |
| *CEOAGE* | + | 43669 (1.98**) | 15340 (1.28) |
| *CEOTENURE* | + | 36347 (1.55*) | -14648 (-1.15) |
| *CEOISFOUNDER* | ? | -894367 (-1.64*) | 11858 (0.04) |
| *OWNERSFIVEPERCENTPCTG* | - | -829087 (-0.94) | -851783 (-1.77**) |
| *Year Indicator* | | Yes | Yes |
| *Industry indicators* | | Yes | Yes |
| *Adj-R2* | | 0.29 | 0.17 |
| *F-value* | | 9.95*** | 5.51*** |
| *# of Companies* | | 1737 | 1737 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the t-test statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

### 2.5.5 Future Firm Performance

CEO compensation is higher in companies where social ties between management and compensation committee exist. This higher compensation could suggest that these CEOs are better and therefore deserve higher compensation. Thus, one might expect to see that their future performance would also be superior. To control for such possibility, I include in the compensation models future performance variables. I include both future return on assets and future return on equity. Results indicate (not tabulated) that for both the base salary and total annual cash compensation, having social ties with compensation committee members remains positive and highly significant ($p<0.01$). However, future performance variables are not significant.[22] Additionally, I examine whether social ties to the compensation committee are associated with improved performance. I estimated four models, with current and succeeding years' return on assets, and with current and succeeding years' return on equity as the dependent variables. Results indicate (not tabulated) that companies with social ties between management and compensation committee members do not perform better than other companies. These results suggest that the observed higher compensation is a result of an agency problem and not as a result of superior performance.

[22] Including future performance variables reduced the sample size to 3,187 observations.

### 2.5.6 Busy board and CEOs' Compensation

Fich and Shivdasani (2006) documented that boards in which the majority of the directors hold three or more directorships (busy boards) are associated with poor governance. This measure can be positively correlated with the social ties measure used in the current study. Therefore I add a control variable *BusyBoard* that is equal to 1 if the company has a busy board; and zero otherwise. Table 24 shows that *BusyBoard* is positively associated with CEO base salary (total annual cash compensation) ($t = 5.34$; $p < 0.01$($t = 6.77$; $p < 0.01$)) and that social ties to the compensation committee measures continue to be significant.

**Table 24 –CEO Compensation Busy Boards and Directors-Management Ties**

| | | **A.** *Base salary* | **B.** *Total annual cash compensation* |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -520018 (-7.28***) | -2525558 (-7.97***) |
| *CompensationInsideToIndependent (H2)* | + | 35196 (2.14**) | 110447 (1.52*) |
| *CompensationInsideToIndependent (H2)* | + | -16894 (-0.97) | -126722 (-1.44) |
| *BusyBoard* | + | 96126 (5.34***) | 540574 (6.77***) |
| *lnTA* | + | 117925 (36.6***) | 491091 (34.37***) |
| *BTM* | - | -31366 (-2.03**) | -165858 (-2.42***) |
| *ROA* | + | -48515 (-0.94) | 861755 (3.75***) |
| *stdROA* | + | 124710 (1.92**) | 1546167 (5.37***) |
| *ALLCOMMCOMPINDEPENDENT* | - | -12840 (-1.36*) | -43731 (-1.04) |
| *BOARDSIZE* | + | 9097.89 (4.85***) | 13134 (1.58*) |
| *PINDEPENDENT* | ? | 140231 (4.82***) | 315014 (2.44***) |
| *PDIRECTORSOVER70* | + | 65680 (2.09**) | 4228.228 (0.03) |
| *CEOISCHAIRMAN* | + | 31317 (3.64***) | 145759 (3.82***) |
| *CEOAGE* | + | 2683.82 (4.56***) | 4372.998 (1.67**) |
| *CEOTENURE* | + | 1098.931 (1.76**) | 6735.923 (2.44***) |
| *CEOISFOUNDER* | ? | -79357 (-5.40***) | -127910 (-1.96**) |
| *OWNERSFIVEPERCENTPCTG* | - | -8045.84 (-0.33) | -461761 (-4.23***) |
| *Year Indicator* | | Yes | Yes |
| *Industry indicators* | | Yes | Yes |
| *Adj-R2* | | 0.51 | 0.50 |
| *F-value* | | 46.68*** | 44.94*** |
| *# of Companies* | | 3498 | 3498 |

*Notes:* The table presents model coefficients, with the following indicators of significance of the t-test statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

### 2.5.7 CEO Reputation and Compensation

A reputable CEO might earn more compensation. One way to measure a director reputation is by the number of boards s/he is serving on (Fama and Jensen 1983). Applying the same logic to the CEO, I constructed a variable *CEOReputation* which is equal to the number of boards that the CEO is currently serving on. It is important to control for such measure because it can be positively correlated with the social ties measures, which might capture CEO reputation instead of personal ties. Table 25 shows that *CEOReputation* is positively associated with CEO base salary (total annual cash compensation) ($t = 3.51$; $p < 0.01$($t = 2.72$; $p < 0.01$)) but the social ties to the compensation committee measures are still significant.

**Table 25 -CEO Compensation CEO Reputation and Directors-Management Ties**

| | | **A.** *Base salary* | **B.** *Total annual cash compensation* |
|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (t-statistic)*** | ***Coefficient (t-statistic)*** |
| *Intercept* | | -533004 (-7.46***) | -2658756 (-8.34***) |

| | | | |
|---|---|---|---|
| *CompensationInsideToIndependent (H2)* | + | 31991 (1.89**) | 126889 (1.68**) |
| *CompensationInsideToIndependent (H2)* | + | -28778 (-1.48) | -149532 (-1.83*) |
| *BusyBoard* | + | 21266 (3.51***) | 73461 (2.72***) |
| *lnTA* | + | 119736 (37.3***) | 504262 (35.19***) |
| *BTM* | - | -24794 (-1.59*) | -152706 (-2.19**) |
| *ROA* | + | -33331 (-0.63) | 971408 (4.12***) |
| *stdROA* | + | 131406 (2.00**) | 1616398 (5.50***) |
| *ALLCOMMCOMPINDEPENDENT* | - | -11173 (-1.17) | -40943 (-0.96) |
| *BOARDSIZE* | + | 8117.275 (4.29***) | 9546.72 (1.13) |
| *PINDEPENDENT* | ? | 132971 (4.53***) | 327859 (2.5***) |
| *PDIRECTORSOVER70* | + | 64733 (2.03**) | 9688.65 (0.07) |
| *CEOISCHAIRMAN* | + | 34575 (3.96***) | 157208 (4.03***) |
| *CEOAGE* | + | 2460.28 (4.13***) | 4252.48 (1.60*) |
| *CEOTENURE* | + | 1007.733 (1.62*) | 5915.01 (2.13**) |
| *CEOISFOUNDER* | ? | -77658 (-5.25***) | -121103 (-1.84**) |
| *OWNERSFIVEPERCENTPCTG* | - | -17181 (-0.69) | -468040 (-4.22***) |
| *Year Indicator* | | Yes | Yes |
| *Industry indicators* | | Yes | Yes |
| *Adj-R2* | | 0.51 | 0.49 |
| *F-value* | | 45.96*** | 43.70 |
| *# of Companies* | | 3443 | 3443 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the t-test statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

### 2.5.8 Expertise Material Weakness and Restatements

Bedard et al. (2007) and Zhang et al. (2007) documented that companies with higher percentage of financial experts in the audit committee have less material weaknesses. Abbot et al. (2004) find a significant negative association between the existence of at

least one financial expert on the audit committee and the likelihood of restating the financials. Carcello et al. (2002) measured expertise as the average number of outside directorships held by audit committee members. Hence because the measure of social ties depends on the fact that board member serve on more than one board it might capture some sort of expertise rather than collaboration. Therefore, I control for that by adding two measures of expertise that were previously documented in the literature. First, I add a direct measure, following Bedard et al. (2007) I parse all the audit committee member biographical information and classify them to be accounting financial experts (*AFE*) or supervisory financial experts (*SFE*), and use the proportion of these to measure the percentage of such experts within the audit committee.[23] A second measure of expertise is a non-direct measure that can be correlated with the social tie measure. Following Carcello et al. (2002), I define non-direct financial expertise (*NDFE)* as an indicator variable equal to 1 if the company has an audit committee member that serves on at least two distinct audit committees, and zero otherwise. Table 26 columns A and B present the results of this analysis with respect to material weaknesses and columns C and D with respect to restatements. Similar to Bedard et al. (2007) I find that both AFE and SFE are negatively associated with the likelihood of MW, and in addition I also find that NDFE is negatively associated with the likelihood of MW. However, my measure of social ties to the audit committee members is still significant, suggesting that controlling for expertise

[23] An AFE is an audit committee member for whom his/her bio contains at least one of the following titles: cpa, certified public accountant, cfa , certified financial analyst, cma, certified management accountant, cfo, chief financial officer, principal financial officer , chief accounting officer , principal accounting officer, treasurer, auditor, vice president–finance , vice president of finance. An *SFE* is an audit committee member that his/her bio contains at least one of the following titles: ceo, chief executive officer, coo, chief operating officer, and chairman of the board. The rest are classified as non-experts.

does not change my results. With respect to restatement, the expertise measures are not significant but the social tie measure still is.

**Table 26 -Logistic Regression of Material Weakness, Restatements and Financial Expertise**

| | | **A. MW – AFE +SFE** | **B. MW– NDFE** | **C. Restatements -AFE +SFE** | **D. Restatements -NDFE** |
|---|---|---|---|---|---|
| ***Variable*** | ***Predicted sign*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** | ***Coefficient (Wald Chi-Square)*** |
| *Intercept* | | -0.09 (0.04) | -0.58 (1.39) | -1.20 (9.68***) | -1.31 (10.81***) |
| *AFE* | - | -0.57 (3.38**) | | -0.28 (1.23) | |
| *SFE* | - | -0.49 (5.29**) | | -0.07 (0.14) | |
| *NDFE* | - | | -0.19 (7.89***) | | -0.03 (0.30) |
| *AuditInsideToIndependent* | - | -0.92 (5.34**) | -0.83 (4.32**) | -0.46 (3.53**) | -0.45 (3.28**) |
| *NonAuditInsideToIndependent* | - | -0.14 (0.20) | -0.09 (0.07) | -0.26 (1.08) | -0.25 (0.98) |
| *ALLCOMMAUDITINDEPENDENT* | - | -0.01 (0.04) | -0.01 (0.00) | 0.20 (2.29*) | 0.20 (2.27*) |
| *ACSIZE* | - | -0.08 (1.66*) | -0.05 (0.5364) | -0.10 (3.37**) | -0.09 (2.93**) |
| *BOARDSIZE* | + | 0.04 (1.6389) | 0.04 (1.8747*) | 0 (0.00) | 0 (0.00) |
| *PINDEPENDENT* | - | -1.09 (5.80***) | -1.06 (5.43***) | -0.89 (5.84***) | -0.88 (5.65***) |
| *CEOISCHAIRMAN* | + | 0.08 (0.43) | 0.08 (0.39) | 0.31 (8.35***) | 0.31 (8.38***) |
| *lnTA* | - | -0.13 (7.75***) | -0.11 (5.01**) | 0.07 (3.55) | 0.08 (3.97) |
| *ROA* | - | -2.91 (14.00***) | -3.04 (15.21***) | -1.22 (3.33**) | -1.24 (3.42**) |
| *LOSS* | + | 0.58 (11.29***) | 0.57 (10.98***) | 0.53 (13.44***) | 0.52 (13.20***) |
| *MERGER* | + | -0.27 (3.35**) | -0.25 (2.92**) | -0.05 (0.17) | -0.05 (0.17) |
| *RESTRUCTURE* | + | 0.17 (1.58) | 0.17 (1.60) | 0.17 (2.26*) | 0.17 (2.31*) |
| *EXTREMEGROWTH* | + | 0.01 (0.00) | -0.02 (0.01) | 0.26 (3.26**) | 0.26 (3.12**) |

| | | | | | |
|---|---|---|---|---|---|
| *SEGMENT* | + | 0.03 (4.41**) | 0.03 (4.71**) | -0.02 (2.71**) | -0.02 (2.62*) |
| *FOREIGN* | + | 0.31 (5.68***) | 0.33 (6.37***) | -0.122 (1.25) | -0.12 (1.20) |
| *BIG4* | + | -0.24 (0.91) | -0.26 (1.05) | -0.16 (0.51) | -0.17 (0.59) |
| *AUDITORCHANGE* | + | 0.73 (10.70***) | 0.71 (10.04***) | 0.22 (1.20) | 0.22 (1.22) |
| *LITIGATION* | + | -0.07 (0.19) | -0.06 (0.15) | 0.57 (25.66***) | 0.57 (25.84***) |
| *Year Indicator* | | yes | yes | yes | yes |
| *LIKELIHOOD RATIO* $\chi 2$ | - | 175.643*** | 177.354*** | 196.140*** | 195.202*** |
| *WALD* $\chi 2$ | | 167.601*** | 167.801*** | 181.710*** | 180.949*** |
| *PSEUDO* $R^2$ | | 0.0577 | 0.0582 | 0.0541 | 0.0539 |
| *# of Companies* | | 2956 | 2956 | 3525 | 3525 |

***Notes:*** The table presents model coefficients, with the following indicators of significance of the Wald Chi-squared statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. One-tailed tests are used when coefficients have predicted signs. Variables are defined in previous Tables

### 2.5.9 Company Complexity and Advising Requirements

Not all companies have similar level of complexity and hence the likelihood of MWs or restatement is different. While I control for size and complexity and find that social ties with audit committee members facilitate better advising leading to better quality financial reports, complex companies might benefit more from advising. To examine such possibility, I interact the social tie with audit committee members indicator, with firm size, and with five different complexity proxies: the number of geographic and business segments, foreign operations, recent merger, extreme sales growth and recent restructuring activities. Additionally, I create a composite complexity proxy equal to the

sum of the five complexity variables.[24] I fail to find any significance on any of the interactions terms. This suggest that with respect to the financial reporting process, complex companies do not benefit more from advising than other companies.

### 2.5.10 Stock Volatility, Discretionary Accruals and Social Ties

As mentioned before, social ties to audit committee members might facilitate a collusion behavior between management and independent directors that will result in misreporting. However, because external auditors are also involved in the process, the likelihood for collusion is reduced. Nevertheless, I examine whether these social ties are associated with daily stock return volatility as a proxy for market reaction to misreporting likelihood, or with discretionary accruals as a proxy for earning management. In both cases if a collusion behavior exists, then higher current or future daily stock return volatility and higher discretionary accruals are expected. Using CRSP, I calculate the standard deviation of daily stock return for current and succeeding years. This resulted with 2,977 and 2,781 observations for current and succeeding years' daily stock returns respectively. In both the current and succeeding years models, having social ties with the audit committee is negatively associated with daily stock return volatility ($p<0.1$).[25] I continue by estimating discretionary accruals for the current and succeeding years using both the modified Jones model (Dechow et al. 1995) and the return on assets performance adjusted method (Kothari et al. 2005). In both models having social ties with the audit committee is not significantly associated with the absolute value of discretionary

[24] The composite measure is the sum of indicator variables taking values from 0 to 5. Geographic and business segments is a continuous variable, hence for this variable I find the sample median and assign the value of 1 to companies with geographic and business segments above the sample median; and zero otherwise.

[25] The models are well specifies with adjusted $R^2$ equal to 51%

accruals. Taken these analyses together, it is suggested that with respect to financial reporting, there is no indication for a collusion behavior when social ties with audit committee members exist.

## 2.6 Conclusions, Limitations and Future Research

This article examines whether social ties between management and independent board members are associated with board activities. First, I examine whether social ties are associated with an increase in CEO compensation as measured by the base salary and total annual cash compensation. Second, I examine whether social ties are associated with better quality financial reporting as measured by the existence of a material weakness in internal controls or the need to restate the financial reports.

With respect to CEO compensation I find that reciprocal ties that were common in the past and were scrutinized by the public and regulators are less frequent in 2004 and 2005. I also find that those reciprocal ties are not associated with CEO compensation. Consistent with Larcker et al. (2006) and with the managerial power theory (Bebchuk and Fried 2004) I find that social ties between managers and independent directors are positively associated with CEO compensation. More importantly, I find that only social ties between management and independent board members that serve on the compensation committee are significantly associated with CEO compensation. These findings suggest that only social ties between managers and directors that can affect the compensation outcome matter.

Consistent with the board collaboration model (Westphal 1999) and the theory of friendly boards (Adams and Ferreira 2007) I find that social ties between managers and their independent board members are associated with better internal controls and higher

quality financial reports. Further, I find that only social ties between management and independent board members that serve on the audit committee have an effect on the quality of the internal controls and the financial reports. These findings strengthen the assertion that only ties to board members that can affect the financial reporting outcome matter. An alternative explanation could suggest that the existence of such ties might (similar to the compensation analysis) lead to collusion between management and audit committee members resulting in misreporting the existence of material weaknesses or the need to restate the financials. However, in these cases the decisions on whether to disclose problems in the internal controls or disclose the need to restate the financials are at least partly exogenous. These decisions involve the external auditor reducing the likelihood of three-way collusion.

My overall results suggests that depending on the context, social ties between management and their independent directors who serve on specific committees can have either positive or negative outcomes. Hence, regulators might need to better define the meaning of independence, especially with respect to the compensation committee members. In contrast, regulators and industry leaders should think of ways to possibly promote an environment of collaboration between management and audit committee members.

This work has a few limitations that are common to this type of study. First, while I can reveal social ties between board members through their joint board assignments, I cannot observe social ties that are outside of the board room, such as sharing a golf club membership, sending kids to the same high school, or graduating from the same class at college etc. However, this limitation only biases against finding results. Second there is

always the possibility that I have an omitted correlated variable and that the social ties measures capture something else. To reduce this possibility I control for multiple variables that have been documented to influence CEO compensation, material weaknesses and restatements. Finally, common to numerous governance studies, the variables of interest might be in part endogenous to company inherent characteristics, however (as suggested by Larcker et al. 2006) while the composition of the board and its committee is endogenous to the company, the composition of other companies' boards is exogenous to the company, and because the measures depends on the decisions of two distinct companies the problem of endogenous variables is reduced.

Future research might use the social ties proxies and examine their effect on different board responsibilities. For example they can examine if social ties are associated with CEO turnover I expect that more tied boards will be negatively associated with the probability of CEO Job termination, even after controlling for poor company performance. Another possibility is to examine whether managers that are socially tied to the nomination committee members can better influence future member nominations. Both these studies will require a longer time line of data.

# 3 Internally Busy Boards and Firm Value: Evidence from Overcommitted Committee Members

## 3.1 INTRODUCTION

Is there an association between internal board structure and firm value? While numerous studies have examined the association between board size, board external "busyness" and board independence with firm value, I am not aware of any study examining the association between internal board structure or board internal workload and firm value. This question is extremely important because every board needs to decide on the size of its board, the size of each committee and how to effectively assign board members into committees. The lack of any specific guidance, or best practices, in this area leaves such decisions to the best judgment of each board. The current study is the first to examine whether there is an association between internal committee allocation, or excessive committee assignments, and firm value. Serving on multiple committees could lead to different outcomes. On the one hand, independent board members who serve on multiple committees often have a comprehensive understanding of their company and its operation. This broader view could aid independent board members in making more informed decisions. On the other hand, serving on several committees could burden independent board members with excessive compliance and monitoring responsibilities leaving them little time to spend on strategy.

The majority of prior work on board size (Yermack 1996, Cheng 2008) suggests that larger boards could suffer from coordination problems, free riders, and slower decision making leading to decline in valuation and performance. Further, Lipton and Lorsch (1992) describe boards' behavior as 'Dysfunctional' and recommend limiting the size of the board to ten. Up until recently, boards could have assigned insiders (although

many contend that to be ineffective) as well as outsiders to board committees. However, recent regulation requires that the audit, compensation and nomination committees (hereafter the big three committees) be composed solely of independent board members (NYSE 303A, SEC release no. 34-48745). Furthermore, these committees have been impacted by increased compliance and disclosure requirements leading to a greater amount of time that board members need to dedicate to each committee and as a result detract from their ability to effectively fulfill their advisory role. This internal burden is likely more pronounced in smaller boards. Such boards still need to staff these committees and consequently might need to burden each board member with additional committee assignments.

In contrast to internal committee assignments, many prior studies look at multiple board appointments as a measure for the external obligations of these directors. These studies examine whether multiple appointments reduce the time that members can devote to each board and thus undermine their ability to advise and monitor. For instance, Fich and Shivadasani (2006) find that excessively busy boards, with a majority of directors sitting on three or more boards, are associated with weaker corporate performance. Hence, the "busy" measure studied to date concentrates on outside employment and board memberships and ignores internal board commitments. Yet, since, most of the work of the board is delegated to its committees, committee assignments and allocation could also impact the performance of the board. Specifically, board members that serve on more committees need to devote additional time to meet more frequently and understand issues specific to each committee leaving less time for other board activities.

The decision of directors to assume additional board appointments is fundamentally different from their obligation to sit on additional committees. If board members rationally allocate time among their diverse responsibilities (internal and external) they would likely not significantly change the time allocated to one particular board if they receive additional committee assignments. It is more likely that the time spent on additional committees will come at the expense of the time they would have otherwise devoted to other board responsibilities. In contrast, the compensation and prestige associated with additional board appointments could motivate members to rationalize why additional time should be allocated to each additional board. Hence, the time tradeoffs stemming from the additional internal commitments of board members seem to be more direct.[26]

The need to serve on multiple board committees could be impacted by a number of factors including: (1) the number of independent board members (2) the size of each committee and (3) the board's policy for allocating board members to committees. So, while larger boards may still suffer from size inefficiencies, the fewer independent members on smaller boards might be required to spend more time on monitoring, compliance and other non-strategic activities. Boards overwhelmed by procedural work might be less effective in fulfilling their advisory role which could impact company performance and valuation.

Although evidence on the negative outcomes of larger boards is vast, not all firms have downsized their boards. In fact, the Spencer Stuart survey (2007) show little change in board size, 10.9 in 2002 to 10.8 in 2007 including 12 or more members in 80% of S&P

[26] Although some boards compensate directors for each meeting, the Spencer Stuart survey (2007) indicate that fewer companies pay meeting fees.

500 boards. Further, recent evidence shows that the association between board size and firm value could depend on firm characteristics. Specifically, Coles, Daniel and Naveen (2008) find that Tobin's $Q$ is positively associated with board size in complex firms and contend that the advisory needs in these companies could benefit from large, diverse boards.

The goal of this paper is to examine the association between directors' internal commitments and firm value. I achieve this goal by examining board size along with internal board structure. It is hypothesized that internally busy boards, those with a majority of independent members serving on two or more committees, would have less time to devote to advising, leading to lower Tobin's $Q$. Consistent with this hypothesis, I find that companies with increased committee assignments are associated with lower $Q$, which could suggest that directors' effort devoted to compliance leaves little time for advising. Further, consistent with prior research I observe that $Q$ is inversely related to board size, confirming the superiority of smaller boards. Examining the moderating effect of board size on internally busy boards, I find lower $Q$ among companies with larger boards who continue to be busy. Hence, although larger boards have more structural freedom in allocating members to committees, if they fail to do so efficiently, (i.e. in a way that would not burden their independent members), their valuation is further reduced.

After controlling for board size, which is assumed to be fixed in the short run, increased committee assignment should primarily depend on the average committee size as well as the allocation decision (i.e. boards could choose to burden few individuals with additional committee work and free others to perform other tasks). I include the total size

of the three committees and find that the internally busy board indicator continues to be significant. This suggests that after controlling for board size and total committees size the allocation choice of boards with regard to committee assignments is important.

To further investigate the allocation decision of boards, I examine whether companies who completely "free" independent directors from any of the big three committees exhibit differences in firm value[27]. Confirming my expectations, I find higher *Q* in firms that "free" directors from these committees. Finally, recent work on busy boards (Fich and Shivdasani 2006) finds lower *Q* in companies wherein boards are externally busy. I examine whether the combination of boards being internally as well as externally busy is important. I find that both internally and externally busy boards are associated with lower *Q*, but no significant association on the interaction term.

This paper adds to the literature on board size and busy boards with an examination of internal board commitments and the impact of increasing committee assignments on Tobin's *Q*. My paper yields results that suggest that boards should consider measures to reduce the monitoring and compliance burdens on independent directors. This reduction could be accomplished in a number of ways: (1) increase the number of independent board members (2) reduce the committee size or (3) allocate committee assignments in such a way that the number of overcommitted members will be minimized. The adverse consequences associated with larger boards (e.g. Yermack 1996) suggest that reducing compliance burden should not be accomplished by simply increasing board size. Hence, additions of independent members might need to come at the expense of losing some insiders. However, reduction in committee size (an average of

[27] It could well be that these directors are members of other committees. However, other committees are more likely to engage in related to the core objectives of their companies.

4 members in my sample) or freeing up members could be accomplished without adding new members to the board.

The rest of the paper is organized as follows: The second section discusses the relevant literature and develops the hypotheses. The third section presents the sample, methodology and measurements. Findings of the paper are presented in the fourth section. The fifth section, conclude the paper

## 3.2 BACKGROUND

The Business Roundtable suggests that board of directors have five primary responsibilities (The Business Roundtable, 1990). These responsibilities generally fall into two major tasks, monitoring and advising. The monitoring role generally involves overseeing management behavior, whereas the advising role involves helping management in strategy and decision making. It is often the case that boards delegate some of these responsibilities to committees. Generally speaking, the audit, compensation, and nomination committees (the big three committees) are those charged with a monitoring/oversight task.[28] The audit committee is charged with overseeing the financial reporting process and company controls and advising/monitoring management on how to maintain or improve these processes. The compensation committee is charged with setting executive pay and the nomination committee is responsible for reviewing and nominating potential directors to fill vacancies.

Recent requirements arising from the Sarbanes-Oxley act (2002) and the financial markets (NYSE 303A, SEC release no. 34-48745) mandate that companies should establish audit, compensation and nomination committees which should be comprised

[28] The nomination committee, while not directly part of the monitoring, is responsible for managing board memberships, screening potential candidates and need to be comprised of independent directors.

exclusively of independent board members.[29] These requirements restrict the structural freedom of boards to allocate committee assignment. For instance, a board comprising nine directors (two insiders and seven outsiders) and three committees (each composed of three members) would have to allocate at least two members to more than one committee. The independence requirement coupled with increased internal controls regulation and executive compensation disclosures means that there are fewer members eligible to serve on the big three committees. Additionally, in the current environment, those same committees need to meet more frequently. Collectively, the requirement for independence, the increased director liability after SOX (Black et al. 2005 and Klausner et al. 2005), and the more frequent meetings (Spencer Stuart 2007) all contribute to an increased proportion of directorship time that is devoted to compliance and monitoring and less to strategy. Support for this assertion is found in a recent survey by Heidrick &Straggles (2007), "...84% of respondents indicating that to at least some extent they are now spending more time on monitoring and less on strategy." A similar view is shared in interviews with multiple Canadian directors: "directors spoke on their desire to move beyond their 'compliance' (monitoring) role to a more 'value-added' (strategic) role" Leblanc and Gillies (2005).

The current study examines internal committee allocation and primarily relates to two research streams. First, the literature on board size generally finds negative outcomes associated with larger boards (e.g. Yermack 1996 and Eisenberg et al. 1998). The question is how and if board size is associated with committee allocation. More

[29] The audit committee need to be comprised of at least three members but there are not size requirements with respect to the compensation and nomination committees. Directors are considered independent if they are not current or former employees of the company, and are not affiliated with the firm other than through their directorship

specifically, can smaller boards handle the current compliance and monitoring tasks and still carry out their advisory role? The second literature stream examines the number of external board memberships as a proxy for external commitments among directors. This line of research examines whether companies with "externally busy" board members experience inferior performance (e.g Fich and Shivadasani 2006). This literature evaluates board busyness based on a measure of external commitments and, for the most part, ignores how internal board obligations impact performance. Each of these research streams is discussed below.

### 3.2.1 Board Size

The literature on board size examines the association between board size and the effectiveness of the board in monitoring and advising. Lipton and Lorsch (1992) and Jensen (1993) suggest that larger boards could be less effective than smaller boards because of coordination and free-riding problems. Indeed, most papers examining board size find that smaller boards are superior on several dimensions. Yermack (1996) finds that, among large US corporations, Tobin's $Q$ is lower for companies with larger boards. Similarly, Eisenberg, Sundgren, and Wells (1998) observe a similar negative relationship between $Q$ and board size among smaller firms. Collectively, prior research indicates that board size is negatively associated with firm value. Other studies concentrating on monitoring observe that larger boards are associated with poorer corporate governance. For example, larger boards tend to provide the CEO with higher compensation and are associated with higher incidence of financial restatements (e.g. Core et al. 1999, Abbot et al. 2004). Formally, theoretical models of board structure suggest that board members

are less effective monitors when boards become larger because of "free-riders" (Raheja, 2005 and Harris and Raviv, 2007).

If large boards are consistently associated with inferior performance, the question remains why would some firms continue to sustain larger boards? This is asked by Hermalin and Weisbach (2003) who question why the market permits larger boards to exist and is empirically examined by Coles, Naveen and Lalitha (2008). They observe that firms with certain characteristics benefit from having larger board of directors. Specifically, they find that more complex firms are likely to need more advising and hence, could benefit from outside directors' advice. This suggests that under some circumstances, smaller boards are not always the better choice. In addition to the findings of Coles et al. (2008), smaller boards are also more constrained with regard to their compliance responsibilities since they have fewer board members that can be allocated to committees.

Committee assignments relate directly to board size and the number of independent board members. Downsizing or upsizing the size of the board is costly and therefore the size of the board is relatively fixed, at least in the short run (Coles et al. 2008). Given board size, committee allocation depends on directors' relevant experience, the size of the big 3 committees, and the allocation choice of members to committees. Suppose that two companies have 7 independent board members and that one company sets the total size of the big three committees at 8 (3 to the audit committee, 3 to the compensation committee and 2 to the nomination committee) while another company sets that number at 12 (4 in each committee). This decision directly impacts the number of committee assignments for each board member and most likely the amount of time that

directors can devote to each committee and to other board responsibilities. The aforementioned implies that board size, the number of independent directors, and committee size all have a direct impact on committee allocation and consequently the relative busyness of each director.

### 3.2.2 Busy Boards

The literature on board busyness primarily examines the association of the number of directorships held by independent board members with firm performance and with the monitoring quality of the board. The number of directorships captures two different effects, on the one hand, multiple directorships implies increased board members' expertise and reputation capital (Fama 1980,Fama and Jensen 1983, Shivdasani 1993 and Vafeas 1999). On the other hand, an excessive number of external directorships is indicative of an over-commitment of board members to other boards. These two effects can have different results. (1) reputation capital could lead to better performance (2) increased outside activity could imply less time that a busy board member could devote to each company. The "busy" director hypothesis, which suggests that an increased number of directorships would be detrimental to company performance, is relevant to the current paper.

In contrast to the perspective that points out the benefits associated with reputation capital, multiple directorships could lower the effectiveness of the board as monitors. Core, Holthausen, and Larcker (1999) find that firms with a greater fraction of outside directors serving on three or more additional boards have greater agency problems as measured by CEO compensation. This implies that directors who sit on several external boards might be too busy to engage in monitoring. Using a similar

"busy" definition, Shivadasani and Yermack (1999) find that the CEO is more likely to be involved in the selection of new board members when a greater proportion of outside board members serve on three or more boards.

Although Ferris, Jagannathan, and Pritchard (2003) fail to find a significant association between the average number of directorships held by outside directors and the firm's market-to-book ratio, Fich and Shivadasani (2006) find that this result is sensitive to how the measure for "busy" directors is constructed. They find that firms wherein the majority of outside directors hold three or more board seats have a significantly lower market-to-book ratio. The realization that too many directorships might be harmful is gaining some traction, according to a recent survey of the largest 2,000 publicly traded companies in the US (Heidrick &Straggles, 2007). This survey finds that in 2007 40% of companies decided to set a limit on the number of boards on which outside directors can serve, up from 3% in 2001.

While the number of outside directorships has been used as a measure for "busyness" there are no current studies that examine internal board commitments, or internal "busyness". The current paper defines internal busyness based on the proportion of independent board members that serve on two or more of the big three committees. A higher proportion of members that spend an extensive amount of time on compliance and monitoring responsibilities suggest that fewer members can concentrate on advising and strategy. The "internal busy" measure is different from the "external busyness" measure on a number of dimensions. First, the number of outside directorships and the lack of time could impact both the monitoring and advisory roles. In contrast, the "internal

busy" measure is associated with increased compliance and monitoring efforts and therefore is more likely to negatively impact the advisory role of directors.

The second important difference is the expected utility from serving on additional committees as opposed to serving on additional boards. Directors most likely over-commit themselves with multiple board appointments because of the prestige and fees associated with sitting on numerous boards. Hence, the expected benefit that they expect from each additional board appointment is probably worthwhile, at least in their mind. In contrast, directors' personal gain from serving on additional committees (financial, reputational or other) does not increase with the number of committees. Therefore, the "internal busyness" measure likely captures internal commitment to one company given relatively fixed benefits. Why would serving on multiple committees detract from general board performance? Given that the expected utility from sitting on a particular board is relatively fixed, board members expect to spend a certain amount of time to fulfill all of their board responsibilities. Consequently, members who sit on more committees will likely spend less time doing other tasks. Furthermore, in the current environment, director litigation exposure is such (Black et al. 2005 and Klausner et al. 2005) that directors who face the tradeoffs between advising and committee work might opt for the latter.

Committee work has never been more complicated. Perhaps most notable is the increase in audit committee responsibility. The Sarbanes Oxley Act (2002) introduced additional work and responsibilities to audit committees. Audit committees, as opposed to management, are now responsible for decisions regarding auditor appointment, dismissal and compensation as well as the approval of most non-audit services. Further, audit committees are now required to include at least one audit committee financial

expert and to disclose their name (SEC Rule 33-8177; 2003). Finally, audit committees are now charged with the quality of the internal controls, and knowledge of significant deficiencies in the internal controls are now required to be communicated directly to audit committee members. This, as well as increased pressure to improve the quality of the financial reports have all made the work of audit committee members more complicated and more demanding than ever before.

The compensation and nomination committees' work is also extremely complicated. With significant attention to executive compensation, new disclosure requirements (SEC 2006) and the increased complexity of executive pay, many compensation committees employ compensation consultants to assist them in performing their complicated duties. Nomination committees are also working harder to find qualified individuals for board positions. The increased liability and workload contribute to the difficulty that nomination committees face in finding and screening qualified individuals (Cytron 2005). The Spencer Stuart (2007) report corroborates this, finding that the compensation and nomination committee meetings are on the rise. Collectively, due to the complex task of each committee, the effectiveness of committee performance hinges directly on time commitment. Membership on more than one committee by a large percentage of the board will likely reduce the time that each member could spend on strategic tasks and consequently impact company performance. This leads to the first hypothesis, stated in the alternative form.

**H1:** Tobin's $Q$ is negatively associated with internally busy boards.

While the literature on board size primarily finds that companies with smaller boards perform better, this association does not hold for complex companies with high

R&D (Coles et al. 2008) or for banking firms (Adams and Mehran 2005). Smaller boards might generally be busier because of the reduced number of directors that can accept committee assignments. This view is shared by many Canadian directors who say in interviews that "Time is a problem. Being a director demands so much time of a person especially when you move to smaller boards of fifteen or sixteen people and have to staff committees" (Leblanc and Gillies 2005). Given the adverse consequences of having larger boards, I do not expect that this association would disappear. Yet, I expect that larger boards would be able to handle committee assignments more efficiently and thereby reduce the internal busyness of the board. If they fail to do so, it is expected that a larger board that is also internally busy would suffer an additional reduction in firm value. Hence, I expect that the interaction between board size and the internal busyness measure will be negative. The above argument leads to Hypothesis 2.

**H2:** Board size will be negatively associated with Tobin's Q, and this association will be more negative for internally busy boards.

The negative association of board size with board responsibilities was often attributed to director "free-riding problem" (Lorsch 1992 and Jensen 1993). This argument relates to the decrease in the exerted effort of some individual directors as the number of directors increases. While larger boards might experience free riding problems they might also be able to "free" directors from their monitoring responsibilities and utilize them more strategically. The question is whether companies who free directors to other board responsibilities perform better[30]. As an illustration, let's assume that a board with 7 independent members and 12 committee seats has two choices; one board could

[30] It is plausible that directors that do not serve on any of the mandated three committees would serve on other committees. I view the role of these committees, if not mandated by the SEC, as more strategic.

assign 5 members to two committees and the remaining two to one committee. Another board could assign 6 members to two committees and "free" a board member to perform other tasks.

Generally, there are two types of "free" directors, those that recently joined the board and directors with longer tenure. Some companies have policies dictating that new directors need to be slowly transitioned into their roles on the board and therefore at first are exempt from committee duties. This decision is made to allow directors to familiarize themselves with the company and its operations. The tenured directors not assigned to any of the big three committees are those that could potentially have the opportunity to engage in strategy. Hence, companies in which boards are able to free directors from mandatory committee work are expected to perform better. This argument leads to hypothesis 3.

**H3:** Companies with board members who do not serve on any of the big three committees will have higher Tobin's Q.

The argument thus far separated internally busy board members from their external responsibilities. The literature on the affects of externally busy boards shows mixed results. In a recent work Fich and Shivadasani (2006) find that externally busy boards are associated with lower *Q*. The question is whether one type of busyness is more detrimental than another as well as whether a composite measure of internal and external busyness would better capture the busyness of directors. As discussed earlier, these two measures are fundamentally different and neither measures the actual time constraints of board members. In theory, the construction of either measure is centered on the premise that time is fixed and that every additional responsibility would come at the expense of

another. Extending this argument, it is worthwhile to examine whether a combined measure of external and internal busyness is associated with firm value. Hence, while internally busy boards as well as externally busy boards are expected to be inversely related to firm value, this association is expected to be stronger for companies in which boards are externally as well as internally busy. This argument leads to hypothesis 4.

**H4:** Tobin's Q will be negatively associated with internally and externally busy boards and this association will be more negative among companies whose boards are internally as well as externally busy

## 3.3 METHOD

### 3.3.1 Sample

The sample is drawn from two main sources. Data on individual directors and other governance information are obtained from the *Corporate Library* database. Financial variables and segment data are drawn from *Compustat*. Data is collected for the four years 2003-2006. These years encompass the post SOX period, during which the task of the board of directors and its committees with respect to compliance have increased. I impose the following four restrictions on the data: first, all the companies in my sample are required to have data on the big three committees i.e. audit, compensation and nomination.[31] Second, for consistency with prior studies in the area and to control for company size effects I limit my sample to Fortune 1000 firms. Third, due to differences in regulation that can limit the role of the board I eliminate companies from the Financial or Utility industries. Finally, as mandated by the SEC, I require all sample companies to

[31] Some companies name their nomination committee as governance committee hence if a nomination committee does not exist but a governance committee does, I treat the governance committee as a nomination committee

have at least three members on their audit committee (SEC 2003). These restrictions yield a final sample of 2,243 observations for 774 unique companies.[32]

I focus my study on the internal busyness of independent board members. As mentioned earlier in the text, regulation among the major stock exchanges (NYSE 303A, SEC release no. 34-48745) now mandate that the compensation, nomination and audit committees be entirely comprised of independent board members. Hence, the compliance burden on independent board members in the period that I examine is probably high. I define internally busy board members as directors who sit on at least two committees. The complement of this measure shows which independent board members focus their efforts only on one committee or on other board responsibilities. According to my definition, internally busy boards of directors are those wherein 50% or more of its independent board members are internally busy (i.e., serve on at least two committees). My main dependent variable is Tobin's $Q$ which serves as a proxy for firm value. Similarly to other studies (e.g. Coles et al. 2007, Fich and Shivdasani 2006) I construct Tobin's $Q$ as the value of book assets minus the value of book equity plus market value of equity all divided by the value of book assets.

## 3.4 RESULTS

### 3.4.1 Descriptive Statistics

Table 27 presents descriptive statistics on board member's internal busyness, board's structure, other financial variables and sample correlation with internal board busyness. Table 28 provides more detailed information with respect to the source and construction of each variable. Independent board members serve on average on 1.56

[32] In robustness tests of my models I consider different samples specification

committees. About 53 percent of directors serve on at least two committees and about 57 percent of my sample contains companies that have internally busy boards. I further explore how many board members do not serve on any committee. These members probably perform other board tasks. There are two types of members that do not serve on any of the big three committees. First, some companies institute a policy to slowly transition new board members into their board responsibilities. This variable accepts the value of one if an independent board member that do not serve on any committee has tenure of one year or less. Four percents of the independent board members are slowly transitioned into the board. The second category of "free" directors include members that have been with the firm for more than a year but do not serve on any of the big three committees. These board members are more likely to dedicate more of their time towards other board responsibilities. On average, four percents of independent board members do not serve on any big three committees and they have been on the board for more than a year. The mean (median) board size is 9.9 (10) members, out of which, on average, 7 members are independent. The size of the board as well as the number of independent board members are each negatively correlated with the internal busyness indicator variable. This implies that, on average, smaller boards require independent board members to serve on more committees. Previous studies have shown that smaller boards are positively associated with Tobin's $Q$ (e.g. Yermack 1996), hence, by extension, if the size of the board dominate the relation with Tobin's $Q$ it is expected that internally busy boards which are naturally smaller would be also positively associated with Tobin's $Q$. However, the table reveals that the correlation between Tobin's $Q$ and internally busy board is negative. Examination of committee's size reveals that the mean and median of

all committee sizes is approximately four and is positively associated with internal busyness. This suggests that boards who opt for larger committees and have a smaller pool of independent members to structurally support the staffing of their committees, are more likely to be internally busy. Externally busy boards, those that 50% of their independent board members serve on more than 3 committees, are negatively associated with *Q*. Almost a quarter of the sample (22%) is comprised of companies that have externally busy boards, correlation shows that boards that are internally busy also tend to be externally busy.

Descriptive of financial data shows that the mean (median) value of Tobin's *Q* is 1.89 (1.63) this is similar to Coles et al. (2007) who report a mean Tobin's *Q* of 1.79. The mean (median) return on assets is 0.057 (0.057) and is not correlated with internal busyness. The mean market size is $8.3 billion with a mean of $12.6 billion in total assets and a mean of 8.6 geographic and business segments. The mean capital expenditure over sales is almost 5 percent. Finally, on average, 8.7 percent of stocks are held by executives and directors.

**Table 27 - Descriptive Statistics on Dependent and Independent Variables**

| Variable | Mean | Median | Std. dev. | Correlation with "Internally Busy Board" |
|---|---|---|---|---|
| Board Characteristics | | | | |
| Average number of committees per board member | 1.56 | 1.50 | 0.45 | 0.66*** |
| Percentage of internally busy directors | 0.53 | 0.50 | 0.26 | 0.78*** |
| Percentage of internally busy boards | 0.58 | 1.00 | 0.49 | 1.00 |
| Percentage of "free" directors | 0.04 | 0.00 | 0.08 | -0.23*** |
| Percentage of "eased" into the board directors | 0.04 | 0.00 | 0.08 | -0.14*** |
| Board size | 9.90 | 10.00 | 2.02 | -0.33*** |
| Number of independent board members | 7.09 | 7.00 | 2.05 | -0.33*** |
| Percentage of independent board members | 0.72 | 0.75 | 0.15 | -0.15*** |
| Audit committee size | 3.93 | 4.00 | 0.90 | 0.11*** |
| Compensation committee size | 3.68 | 4.00 | 0.95 | 0.20*** |
| Nomination committee size | 3.83 | 4.00 | 1.17 | 0.33*** |
| Percentage of externally busy boards | 0.23 | 0.00 | 0.42 | 0.05** |
| Firm Characteristics | | | | |
| Tobin's Q | 1.89 | 1.63 | 0.81 | -0.07*** |
| ROA | 0.06 | 0.06 | 0.06 | 0.01 |
| Market cap (MM$) | 8,363.86 | 4,138.82 | 9,334.58 | -0.14*** |
| Total assets (MM$) | 8,718.75 | 3,810.50 | 1,1911.68 | -0.12*** |
| Number of business and geographic segments | 8.61 | 7.00 | 6.57 | -0.02 |
| Directors and executives stock ownership (% of common) | 0.09 | 0.04 | 0.12 | 0.06*** |
| Capital expenditures/Sales | 0.05 | 0.03 | 0.05 | 0.00 |

***Notes:*** *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively

**Table 28 - Variables Definition, Construction and Data Source**

| Variable | Variable definition[source] |
|---|---|
| **Board Characteristics** | |
| Average number of committees per board member | The average number of committees that each independent board member serve on |
| Percentage of internally busy directors | Percentage of independent directors (out of the total number of independent directors) that serve on two board committees or more |
| Internally busy boards | An indicator variable equal to one if 50% or more of the independent board members serve on two or more committees; zero otherwise[Board analyst] |
| Percentage of "free" directors | Percentage of independent directors that have been with the company for more than 1 year and do not serve on any of the three main board committees |
| Percentage of slowly transitioned into the board directors | Percentage of independent directors that have been with the company for 1 year or less and do not serve on any of the three main board committees |
| Log board size | The natural log of the size of the board |
| Percentage of independent board members | The percentage of independent board members out of the total size of the board |
| Audit committee size | The size of the audit committee |
| Compensation committee size | The size of the compensation committee |
| Nomination committee size | The size of the nomination committee |
| Externally busy boards | An indicator variable equal to one if 50% or more of the independent board members serve on more than three boards; zero otherwise[Board analyst] |
| **Firm Characteristics** | |
| Tobin's Q | Total assets minus the book value of equity plus the product of stock price and the number of common shares outstanding divided by book value of total assets. [Compustat( (data6- data60) + (data25 * data199) )/ data6] |
| ROA | Net income divided by total assets [Compustat data172 divided by data6] |
| Log market cap (MM$) | The natural log of market value of equity. [Compustat data25 * data199] |
| Log total assets (MM$) | The natural log of total assets [Compustat data6] |
| Number of business and geographic segments | The sum of reported business and geographic segments [Compustat Segment file] |
| Directors and executives stock ownership (% of common) | Estimated percentage of outstanding shares held by top management and directors, as reported in the company's most recent proxy statement |
| Capital expenditures/Sales | Capital expenditure divided by total sales [Compustat Data128/data12] |

### 3.4.2 Univariate analysis

I start by graphically depicting the association of Tobin's $Q$ with internally busy boards. Figure 2 illustrates separately the mean of Tobin's $Q$ for companies with internally busy board and other companies, sorted by the number of independent board members. Consistent with hypothesis 1 that predicts lower $Q$ among companies with internally busy boards, Figure 2 shows that, holding the number of independent board members constant, the Tobin's $Q$ of firms with internally busy boards is always lower. Interestingly, when comparing firms with an internally busy board comprised of X independent board members to firms with boards that are not internally busy with X+1 independent board members, I find results that are counter to the previous finding that larger boards are associated with lower $Q$ (Yermack 1996). Specifically, I observe that a slightly larger board, in term of independent board members, which is not internally busy is associated with higher $Q$. I further explore this possibility in the multivariate analysis section. Qualitatively similar figures are obtained when using the median $Q$ values instead of the means, and when using the total size of the board of directors instead of the number of independent board members.

**Figure 2 - – Independent Board Members, Tobin's Q and Internal Busy Board**

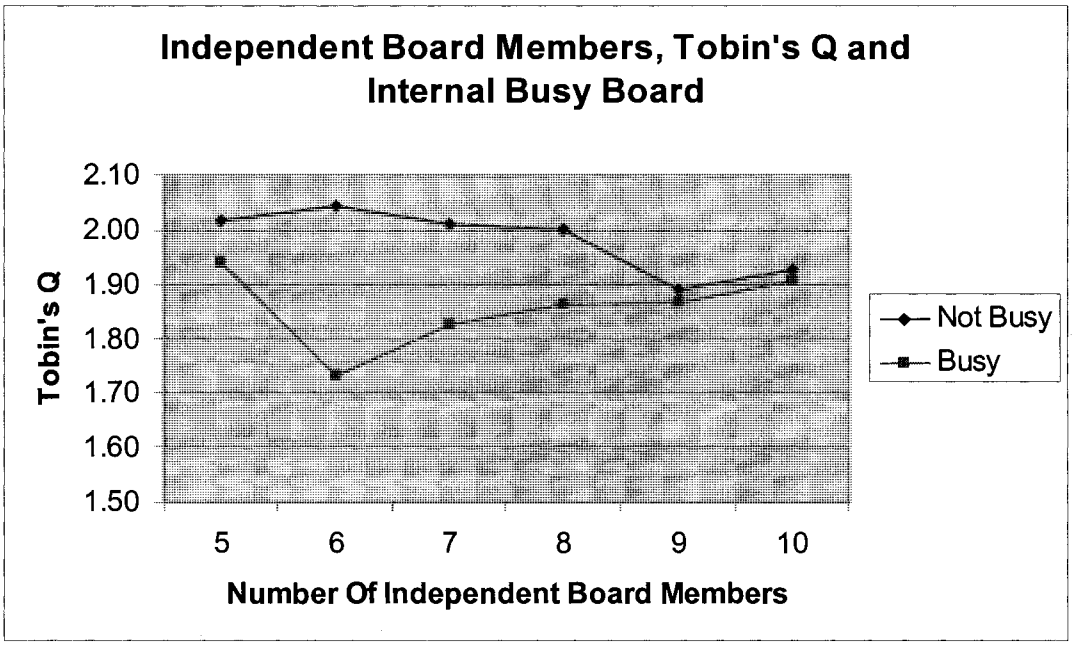



Table 29 presents tests of differences in financial variables between firms that have internally busy board to firms that do not. The table shows that firms with internally busy boards have a lower market cap, lower total assets and more holding of stocks by board members and insiders, these differences are statistically significant (P<0.01). Additionally consistent with H1, $Q$ is lower among firms with an internally busy boards (mean $Q$ = 1.84) in comparison to firms without internally busy boards (mean $Q$ = 1.96), this difference is statistically significant (P<0.01). Other statistics show that firms with internally busy boards do not differ on their return on assets, the number of geographic and business segments and on capital expenditure over assets from firms without internally busy boards. Finally, I examine how externally busy boards relate to internally busy board. I define externally busy board if 50% or more of the independent board

members are externally busy (i.e. serve on more than three boards) [33]. Ferris et al. (2003) find that directors that are externally busy tend to serve on more committees and do not shirk out of their committee's duties. Hence, it could be that internally busy boards also tend to be externally busy. Consistent with Ferris et al. (2003) findings Table 29 shows that internally busy boards tend to have a higher propensity to be externally busy. In the multivariate analysis section I further explore an interaction effect between internally busy boards and externally busy boards as well as their relative importance.

[33] To be consistent with the proportion of busy boards reported by Fich and Shivdasani (2006) I construct the proxy for external busy directors differently. Instead of using three boards as the cutoff for being a busy board member I use a cutoff of four or greater boards. Consequently, 22% of my sample have externally busy board which is similar to the 21% reported by Fich and Shivdasani (2006). Using three memberships as a cutoff resulted in more than 50% of companies classified as having busy boards, this lack of variability did not yield any association with $Q$. There are several reasons why my sample differs from their sample. First they examine an earlier period, 1989-1995, whereas my sample spans over the years 2003-2006. during these period corporate governance has changed substantially. For example they report an average board size of 12, while my average board size is 10; they report that 55% of board members are independent while in my sample 71% are independent.

**Table 29 - Univariate Statistics on Financial Variables, by Internally Busyness**

| | Not Internally Busy Board | | | Internally Busy Board | | | |
|---|---|---|---|---|---|---|---|
| Variable | Number of Observations | Mean (Median) | Std Dev | Number of Observations | Mean (Median) | Std Dev | t-statistic |
| Tobin's Q | 951 | 1.96 (1.71) | 0.81 | 1292 | 1.84 (1.58) | 0.80 | 3.30*** |
| ROA | 951 | 0.06 (0.06) | 0.06 | 1292 | 0.06 (0.06) | 0.06 | -0.45 |
| Market cap (MM$) | 951 | 9,832.96 (5,059.66) | 1,0021.81 | 1292 | 7,282.50 (3,539.59) | 8,640.20 | 6.45*** |
| Total Assets (MM$) | 951 | 10,357.50 (4,455.25) | 12,921.84 | 1292 | 7,512.51 (3,287.67) | 10,959.20 | 5.63*** |
| Number Of Business And geographic segments | 951 | 8.74 (7.00) | 6.41 | 1292 | 8.51 (6.00) | 6.68 | 0.82 |
| Directors And Executives Stock Ownership (% of common) | 951 | 0.08 (0.03) | 0.12 | 1292 | 0.09 (0.04) | 0.13 | -3.01*** |
| Capital expenditures /Sales | 951 | 0.05 (0.03) | 0.05 | 1292 | 0.05 (0.03) | 0.05 | 0.11 |
| Percentage of Outside Busy boards | 951 | 0.20 (0.00) | 0.40 | 1292 | 0.24 (0.00) | 0.43 | -2.24** |

***Notes:*** *, **, *and* *** *denote statistical significance at the 1%, 5%, and 10% levels, respectively*

## Multivariate analysis

In this section I extend the univariate analysis to a multivariate setting and control for other variables that were documented to be associated with *Q* (Yermack 1996, Coles 2007). I employ a series of OLS regressions with Tobin's *Q* as the dependent variable to proxy for firm value. The main test variable is an indicator variable for the internal

busyness of the board. To reduce the influence of outliers, I winsorize all my continuous variables at the 5th and 95th percentile.[34] Additionally, in order to control for industry or year effects, I include indicator variables for two-digit SIC industry code and individual years in each model. I proxy for board size by taking the natural log of the number of members on the board. This variable is expected to be negatively associated with *Q* (Yermack 1996).[35] Firm past and current profitability has been shown to be positively related to *Q*. I use the return on assets of the current, the previous and two previous years. Company size was documented to be positively associated with *Q*. To control for size I use the natural log of market value of equity. Investment opportunities can relate to future firm value, I control for that by using capital expenditure over sales. To proxy for firm complexity and diversification I use the number of geographic and business segments, it was shown that diversified firms are valued less by the market; hence this variable is expected to be negatively associated with *Q*. Finally I control for the percentage of independent board members and the equity held by both insiders and independent board members.

### 3.4.3 Internally busy board and firm value

Table 30 presents results of the OLS model testing the research hypotheses regarding the negative association between internally busy board and firm's Tobin's *Q*. Column A shows an inverse and significant association between internally busy boards and *Q* ($P<0.01$), which supports H1. These results are consistent with the assertion that internally busy boards might not be able to allocate enough time to perform their strategic

[34] Results are qualitatively similar when I winsorize the variables at the 1st or 99th percentile.
[35] Using the natural log of the number of independent board members, the number of members in the board or the number of independent board member instead of the natural log total board size, yields qualitatively similar results.

duty, which in turn results in lower firm value. Aside from the number of independent board members, the internal busyness of boards relate to the size of each committee and to the total number of committee sits. The question is whether the internally busy indicator captures something beyond committee size. To test this I include total committee size as a control variable. Column B shows results when the total of all committees size (the combined number of committee sits) is included. This analysis reveals that the total committee size is not significant whereas the internally busy board indicator remains negative and highly significant ($P<0.01$), these results suggest that the association of internally busy boards with firm value cannot be completely attributed to the structural composition of the board and hence committee allocation decisions do matter. Collectively, results show statistical significance that support H1. The regression coefficients show that the association is also economically significant, on average a firm with internally busy boards has $Q$ that is 11 percent lower. Other control variables are significant in the expected direction. Namely, the size of the board, the percentage of independent board members and the number of geographic and business segment are all significant, and negatively associated with $Q$. Company size, return on assets and the equity holding by executive and independent board members are all significant, and positively associated with $Q$. The models are well specified with an adjusted $R^2$ of 55%.

**Table 30 - OLS Regression of Internally Busy Board, Firm Valuation and Control Variables**

| | A. Internally Busy Board | B. Including Total Committee size | C. Including Log Board Size Interactions | D. Including Raw Board Size Interactions |
|---|---|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 0.99 (4.51***) | 0.935 (4.17***) | -0.29 (-1.57) | -0.31 (-1.66*) |
| Internally Busy Board | -0.11 (-4.3***) | -0.086 (-2.85***) | -0.10 (-3.53***) | |

| | | | | |
|---|---|---|---|---|
| Log of board size | -0.598 (-8.86***) | -0.539 (-6.81***) | -0.51 (-5.23***) | |
| Log of board size * Internally Busy Board | | | -0.08 (-0.67) | |
| Percentage of busy directors | | | | -0.12 (-2.35**) |
| Board Size | | | | -0.05 (-7.94***) |
| Board Size * Percentage of busy directors | | | | -0.05 (-2.30**) |
| Total committee size | | -0.01 (-1.44) | | |
| Percentage of independent directors | -0.16 (-1.77*) | -0.113 (-1.18) | -0.16 (-1.76*) | -0.14 (-1.55) |
| Firm Size (Log Market value) | 0.21 (16.21***) | 0.21 (16.23***) | 0.21 (16.13***) | 0.21 (16.15***) |
| Return on Assets (current year) | 5.58 (19.13***) | 5.582 (19.14***) | 5.58 (19.12***) | 5.58 (19.05***) |
| Return on Assets (prior year) | 1.08 (4.07***) | 1.076 (4.08***) | 1.07 (4.06***) | 1.05 (3.96***) |
| Return on Assets (two years prior) | 1.23 (5.47***) | 1.234 (5.47***) | 1.22 (5.38***) | 1.22 (5.38***) |
| Number of business and geographic segments | -0.01 (-3.66***) | -0.01 (-3.6***) | -0.01 (-3.66***) | -0.01 (-3.70***) |
| Directors and executives stock ownership (% of common) | 0.32 (2.97***) | 0.304 (2.83***) | 0.32 (3.00***) | 0.33 (3.06***) |
| Capital expenditures/Sales | -0.51 (-1.49) | -0.516 (-1.51) | -0.52 (-1.51) | -0.50 (-1.46) |
| Years and Industry Dummies | Included | Included | Included | Included |
| Number of Observations | 2243 | 2243 | 2243 | 2243 |
| F-statistics | 41.01 | 40.46 | 40.27 | 39.93 |
| (P- value) | (0.00) | (0.00) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.55 | 0.55 | 0.55 | 0.55 |

***Notes:*** *The table presents results for estimating the association between internally busy boards and firm value. Column A presents main results Column B include the total committee size Column C includes an interaction between the log board size and the internal busy dummy and Column D includes an interaction between the size of the board and the percentage of internally busy directors. Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented

### 3.4.4 Board size, internally busy boards and firm value

H2 predicts that the value of firms with larger boards would further decrease if the boards of those firms remain busier. Column C examines the interaction between the

natural log of board size and the internal busy indicator. Results show that while the interaction is negative it is not significant. I further explore an additional interaction specification, in order to examine whether this association is not dichotomous but rather continuous. Column D examine an interaction between the size of the board and the percentage of internally busy independent board members. Results show that this interaction is negative and significant (P=0.02) suggesting that when internally busyness is increasing with the size of the board, *Q* is further reduced. Hence there is a partial support for H2.[36]

### 3.4.5 Free directors and company value

Table 31 presents result for testing H3, which predicts that firms with "free" independent directors, those that do not participate in compliance (as measured by committee membership), will have higher company value. Column A of Table 31 shows a positive and significant association between company value and the percentage of all "free" directors (P=0.05). However, as discussed earlier, there are two categories of "free" directors. The first category includes directors who recently joined the board, and I assume, are relieved from committee duties in order to facilitate a slowly transition into the board (slowly transition board members). The second category includes directors who have been on the board for several years, and might be relieved from committee duties in order to focus on other board responsibilities such as strategy formation (strategy dedicated board members). Column B of table 31 reflects this partition and shows that only the percentage of strategy-dedicated board members is significantly and positively

[36] In order to avoid potential multicolliniarity problems, I center independent variables (at their mean) that I interact with internally board busyness. In all of my models, including this interaction model, there are no indications of collinearity, with the highest variance inflation factor being 2.32, which is well below the 10.00 cutoff (Belsley et al. 1980)

associated with $Q$ (P=0.01). These results suggest that only experienced directors that are released from the big three committees can affect company value, while policies of a slow transitioning have no effect.

Finally univariate statistic shows that the existence of "free" directors is negatively correlated with the internal busyness of the board, implying that internally busy boards are less likely to "release" independent directors from committees' duties. Hence, the percentage of "free" members might capture boards that are not internally busy and therefore associated with higher $Q$. To control for this option column C of table 31 includes an indicator for internally busy boards and an interaction between internally busy boards and both types of "free" directors. Results reveal that "strategy dedicated board members" remain positive and significant (P=0.03) and that internally busy board remain negative and significant (P<0.01), the interaction is negative but not significant.

**Table 31 - OLS Regression of Free Directors, Firm Valuation and Control Variables**

| | A. All Free Directors | B. Free Directors By Type | C. Free Directors and Interactions with Internally Busy Boards |
|---|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 0.73 (3.47***) | 0.75 (3.56***) | 1.00 (4.52***) |
| Percentage of Free Directors | 0.21 (2.00**) | | |
| Percentage of Free Directors that are released for board duties | | 0.37 (2.52**) | 0.40 (2.14**) |
| Percentage of Free Directors that are slowly transitioned into the board | | 0.07 (0.51) | 0.08 (0.40) |
| Internally Busy Board | | | -0.08 (-2.55**) |
| Percentage of Free Directors that are released for board duties * Internally Busy Board | | | -0.36 (-1.19) |
| Percentage of Free Directors that are slowly transitioned into the board * Internally Busy Board | | | -0.17 (-0.6) |

| | | | |
|---|---|---|---|
| Log of board size | -0.54<br>(-8.15***) | -0.55<br>(-8.25***) | -0.62<br>(-9.00***) |
| Percentage of independent directors | -0.11<br>(-1.19) | -0.11<br>(-1.20) | -0.15<br>(-1.66*) |
| Firm Size (Log Market value) | 0.21<br>(16.43***) | 0.21<br>(16.43***) | 0.21<br>(16.27***) |
| Return on Assets (current year) | 5.58<br>(19.04***) | 5.58<br>(19.04***) | 5.60<br>(19.17***) |
| Return on Assets (prior year) | 1.05<br>(3.96***) | 1.05<br>(3.98***) | 1.08<br>(4.08***) |
| Return on Assets (two years prior) | 1.23<br>(5.44***) | 1.22<br>(5.41***) | 1.22<br>(5.39***) |
| Number of business and geographic segments | -0.01<br>(-3.70***) | -0.01<br>(-3.73***) | -0.01<br>(-3.6***) |
| Directors and executives stock ownership (% of common) | 0.31<br>(2.89***) | 0.30<br>(2.79***) | 0.30<br>(2.77***) |
| Capital expenditures/Sales | -0.51<br>(-1.49) | -0.51<br>(-1.48) | -0.52<br>(-1.51) |
| Years and Industry Dummies | Included | Included | Included |
| Number of Observations | 2243 | 2243 | 2243 |
| F-statistics | 40.53 | 40.00 | 38.81 |
| (P- value) | (0.00) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.55 | 0.55 | 0.55 |

***Notes:*** *The table presents results for estimating the association between free directors and firm value. Column A presents aggregate result for both types of free directors Columns B breaks down the free directors into two types Column C include the internal busyness of the board indicator and interaction terms of internal busyness with free directors. Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are presented.*

### 3.4.6 Externally busy board, internally busy board and company value

Fich and Shivdasani (2006) find that firms with externally busy boards, those wherein the majority of independent board members serve on three or more boards, have lower *Q*. Ferris et al. (2003) find that directors that are externally busy tend to serve on more committees. Consistent with their findings, my univariate results show that internally busy boards have higher propensity to be also externally busy. Therefore results might be driven by the external busyness of the board rather than by the internal busyness. To control for such possibility I include an indicator variable for external busy boards. Table 32 column A shows that including the external busy indicator does not alter my results and the internal busyness indicator is still negative and significant ($P<0.01$).

Similarly to Fich and Shivadasani (2006), I find that the externally busy board indicator is also negatively associated with *Q* (P=0.04). To examine which type of busyness is more detrimental I compare the coefficients of these variables. While internally busy boards are associated with 11% reduction in *Q*, only a 6% reduction is observed for externally busy boards. However, while the difference seems considerable it is not statistically significant. H4 predicts that being both externally busy and internally busy would result in further reduction in *Q*. Table 32 column B shows that the interaction between externally busy boards and internally busy boards is not significant, hence H4 is not supported.

**Table 32 - OLS Regression of Internally Busy Boards, Externally Busy Boards, Firm Valuation and Control Variables**

| | A. Internally Busy Boards And Externally Busy Boards | B. Internally Busy Boards And Externally Busy Boards and interaction |
|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 0.98 (4.45***) | 0.975 (4.38***) |
| Internally Busy Board | -0.11 (-4.14***) | -0.102 (-3.12***) |
| Externally Busy Board | -0.06 (-2.05**) | -0.057 (-1.83*) |
| Internally Busy Board * Externally Busy Board | | -0.008 (-0.22) |
| Log of board size | -0.596 (-8.83***) | -0.595 (-8.79***) |
| Percentage of independent directors | -0.167 (-1.85*) | -0.165 (-1.82*) |
| Firm Size (Log Market value) | 0.213 (16.35***) | 0.213 (16.24***) |
| Return on Assets (current year) | 5.557 (19.05***) | 5.56 (19.04***) |
| Return on Assets (prior year) | 1.06 (4.02***) | 1.06 (4.02***) |
| Return on Assets (two years prior) | 1.204 (5.34***) | 1.20 (5.31***) |
| Number of business and geographic segments | -0.01 (-3.73***) | -0.01 (-3.73***) |
| Directors and executives stock | 0.315 | 0.32 |

| | | |
|---|---|---|
| ownership (% of common) | (2.95***) | (2.95***) |
| Capital expenditures/Sales | -0.526<br>(-1.53) | -0.53<br>(-1.54) |
| Years and Industry Dummies | Included | Included |
| Number of Observations | 2243 | 2243 |
| F-statistics | 40.53 | 40.00 |
| (P- value) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.55 | 0.55 |

**Notes:** The table presents results for estimating the association between internally busy boards, externally busy board and firm value. Column A presents main results Columns B include an interaction between internally buys board and externally busy board Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are presented.

## 3.5 ROBUSTNESS CHECKS

### 3.5.1 Other proxies for Internal Busyness

Ferris Jagannathan and Pritchard (2003) find no association between external busyness of the board and firm value. Their proxy for external busyness is the average number of directorship held by independent board members. Fich and Shivdasani (2006) find that the association between firm performance and externally busy boards is sensitive to how the proxy for externally busy boards is constructed. Under their definition, externally busy boards are those on which the majority of independent board members serve on three or more external boards. This section examines whether my results are sensitive to the construction of the proxy for internally busy boards. I construct three additional variables for internally busy boards. First, I use the proportion of independent board members (as a percentage of the total number of independent board members) who serve on two or more committees. Second, I use the number of independent board members who serve on two or more committees. Third, I use the average number of committees on which each independent board members serves. In association with $Q$, I find that all of these proxies are negative and highly significant

(P<0.01) suggesting that in the case of internally busy boards the results are not sensitive to the construction technique.

**Table 33 - OLS Regression of Other Proxies for Internally Busy Board, Firm Valuation and Control Variables**

| | A. Proportion of busy independent board members | B. Number of busy independent board members | C. Average number of committees on which each independent board members serves |
|---|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 0.97 (4.17***) | 0.69 (3.34***) | 1.05 (4.24***) |
| Percentage of busy directors | -0.14 (-2.83***) | | |
| Number of busy | | -0.02 (-2.96***) | |
| Average number of committees | | | -0.08 (-2.79***) |
| Log of board size | -0.58 (-8.39***) | -0.50 (-7.76***) | -0.59 (-8.33***) |
| Percentage of independent directors | -0.12 (-1.67*) | -0.03 (-0.33) | -0.15 (-1.68*) |
| Firm Size (Log Market value) | 0.21 (16.27***) | 0.21 (16.29***) | 0.21 (16.28***) |
| Return on Assets (current year) | 5.56 (19.03***) | 5.56 (19.05***) | 5.57 (19.07***) |
| Return on Assets (prior year) | 1.05 (4.00***) | 1.05 (4.00***) | 1.05 (3.99***) |
| Return on Assets (two years prior) | 1.24 (5.53***) | 1.24 (5.50***) | 1.25 (5.54***) |
| Number of business and geographic segments | -0.01 (-3.67***) | -0.01 (-3.67***) | -0.01 (-3.64***) |
| Directors and executives stock ownership (% of common) | 0.31 (2.95***) | 0.31 (2.98***) | 0.31 (2.98***) |
| Capital expenditures/Sales | -0.502 (-1.46) | -0.51 (-1.5) | -0.48 (-1.42) |
| Years and Industry Dummies | Included | Included | Included |
| Number of Observations | 2243 | 2243 | 2243 |
| F-statistics | 40.66 | 40.65 | 40.68 |
| (P- value) | (0.00) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.55 | 0.55 | 0.55 |

***Notes:*** *The table presents results for estimating the association between other proxies for internally busy boards and firm value. Column A uses the proportion of busy independent directors out of the number of independent directors Column B uses the number of busy independent directors and Column C uses the average number of committee that each independent board member serve on. Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented

### 3.5.2 Sample Partition

The sample used throughout the paper is composed of firms that are included on the Fortune 1000 index. These firms vary by size and other characteristics. While I control for firm size in the multivariate models, and take into consideration different proxies for firm size (see next section), my models might still capture a size effect. To account for this, I create four additional analyses. First, I partition my sample below and above the median total assets, which resulted in 1,107 and 1,136 observations below and above the median total assets respectively. I find that in both samples the indicator for internally busy boards is associated with lower $Q$ (P=0.06 and P<0.01, respectively). I perform a similar analysis using the total value of equity as a proxy for firm size. This yields 1,113 and 1,130 observations below and above the median value of equity, respectively. In both samples I observe that internally busy board is associated with lower $Q$ (P=0.04 and P<0.01 respectively). I continue by restricting my sample to firms that are also included on the S&P 500 index, yielding 1,149 observations. I find that internally busy board remains negatively associated with $Q$ (P<0.01). Finally I restrict my sample to firms that also belong to the Russell 1000 index, yielding 1,666 observations. Again, the internally busy board indicator remains negatively associated with $Q$ (P<0.01). Collectively, these results suggest that my findings are not sensitive to sample construction.

**Table 34 - OLS Regression by Sample Partition for Internally Busy Board, Firm Valuation and Control Variables**

| | A. Total assets | | B. Market value of equity | |
|---|---|---|---|---|
| | Below the sample median | Above the sample median | Below the sample median | Above the sample median |
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | -1.26 (-4.18***) | 0.10 (0.30) | 0.95 (3.79***) | 0.31 (0.77) |
| Internally Busy Board | -0.06 (-1.85*) | -0.09 (-2.79***) | -0.05 (-2.03**) | -0.12 (-3.36***) |
| Log of board size | -0.58 (-6.88***) | -0.36 (-3.86***) | -0.29 (-4.07***) | -0.88 (-8.71***) |
| Percentage of independent directors | -0.06 (-0.59) | -0.19 (-1.51) | -0.21 (-2.19**) | -0.05 (-0.43) |
| Firm Size (Log Market value) | 0.55 (23.77***) | 0.21 (8.88***) | 0.17 (7.96***) | 0.28 (9.18***) |
| Return on Assets (current year) | 3.47 (9.19***) | 4.79 (11.58***) | 2.97 (9.88***) | 8.31 (17.83***) |
| Return on Assets (prior year) | 0.09 (0.29) | 1.79 (4.90***) | 0.48 (1.82*) | 1.49 (3.52***) |
| Return on Assets (two years prior) | 0.49 (1.86*) | 1.69 (5.15***) | 0.84 (3.75***) | 1.38 (3.79***) |
| Number of business and geographic segments | -0.005 (-1.31) | -0.01 (-3.03***) | -0.00 (-1.56) | -0.01 (-3.38***) |
| Directors and executives stock ownership (% of common) | 0.05 (0.40) | 0.50 (3.07***) | -0.03 (-0.28) | 0.80 (4.61***) |
| Capital expenditures/Sales | -2.34 (-4.10***) | 0.03 (0.08) | -1.33 (-3.12***) | 0.38 (0.83) |
| Years and Industry Dummies | Included | Included | Included | Included |
| Number of Observations | 1107 | 1136 | 1113 | 1130 |
| F-statistics | 34.84 | 28.83 | 11.14 | 32.28 |
| (P- value) | (0.00) | (0.00) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.66 | 0.59 | 0.37 | 0.63 |

***Notes:*** *The table presents results for estimating the association between internally busy boards and firm value. Column A presents partition of the sample by total assets. Column B presents partition of the sample by market value o equity. Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented

**Table 35 - OLS Regression by Sample Partition for Internally Busy Board, Firm Valuation and Control Variables**

| | A. S&P 500 | B. Russell 1000 |
|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 1.19 (2.72***) | 0.54 (1.82*) |
| Internally Busy Board | -0.09 (-2.63***) | -0.10 (-3.72***) |
| Log of board size | -0.77 (-7.57***) | -0.70 -8.9***) |
| Percentage of independent directors | -0.33 (-2.41**) | -0.16 (-1.57) |
| Firm Size (Log Market value) | 0.22 (9.12***) | 0.26 (14.57***) |
| Return on Assets (current year) | 6.67 (15.00***) | 6.81 (18.84***) |
| Return on Assets (prior year) | 1.12 (2.79***) | 1.31 (3.82***) |
| Return on Assets (two years prior) | 1.64 (4.86***) | 1.60 (5.47***) |
| Number of business and geographic segments | -0.01 (-3.03***) | -0.01 (-3.34***) |
| Directors and executives stock ownership (% of common) | 0.92 (4.74***) | 0.52 (3.86***) |
| Capital expenditures/Sales | -0.41 (-0.86) | -0.40 (-1.05) |
| Years and Industry Dummies | Included | Included |
| Number of Observations | 1149 | 1666 |
| F-statistics | 31.44 | 37.01 |
| (P- value) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.61 | 0.59 |

***Notes:*** *The table presents results for estimating the association between internally busy boards and firm value for different samples. Column A present results for companies belonging to the S&P 500 index. Column B presents results for companies belonging to the Russell1000 index. Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented

### 3.5.3 Performance, Firm Size Proxies and Investment Opportunities

I repeat my analyses replacing the market value of equity with either total assets or total sales. I re-estimated 12 models using the linear, the natural log, the square root or the squared value, of each of the three firm's size proxies. In all of these models the indicator of an internally busy board remains negatively associated with $Q$ ($P<0.01$). Because $Q$ can also capture future investment opportunities (Smith and Watts 1992), I repeat my analysis replacing capital expenditure over sales with two other future investment proxies. First, I use research and development (R&D) expense over sales. Second, I use depreciation expense over sales, in both cases having an internally busy board remain negatively associated with Q ($P<0.01$).

### 3.5.4 Board Size and Committee Size

The internal busyness of the board is correlated with the size of the board, the number of independent board members and the size of each committee. While my multivariate models control for these variables and while I estimate the models both using a 1% and 5% winsorization, there is always the possibility that results might be driven by few outliers. Hence, to control for such possibility I re-estimated models for each of the following samples. First, I only include firms with a board size of ten (the sample median). Second, I only include firms with board size within one standard deviation from the median (i.e. firms with board size between eight to 12). Third, I only include firms with seven independent board members (the sample median). Fourth, I only include firms with five to nine independent board members (one standard deviation). Fifth, I only include firms with total committee size (i.e. the total size of the three

committees) equals to the sample median of 11. Seventh, I only include firms with total committee size between nine to 13 (one standard deviation). The restriction of an exact match to the sample medians reduces the sample significantly to approximately 300 observations for each of the sample median analysis, this reduction reduce the variability of the sample and might reduce significance levels. Within firms with a board size of ten, having an internally busy board is negatively associated with *Q* (P<0.01). Within firms with seven independent board member and within firms with total committees size of 11, having an internally busy board is marginally associated with *Q* (P=0.10 and P=0.08 respectively). In all of the samples with the range of one standard deviation from the median, having an internally busy board is negatively associated with *Q* (P<0.01). Finally I restrict my sample to include firms where all of their committees' size is either three or four. Internally busy board remain negative and significant (P<0.01)

**Table 36 - OLS Regression of Firms with the Median board size, Median Number of Independent Board Members or Median Total Committee Size and Internally Busy Board, Firm Valuation and Control Variables**

| | A. Median board size | B. Median number of independent board members | C. Median total committee size |
|---|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 1.08 (2.43**) | -0.85 (-1.26) | 1.30 (1.75*) |
| Internally Busy Board | -0.18 (-3.42***) | -0.10 (-1.64*) | -0.17 (-1.75*) |
| Percentage of independent directors | -0.37 (-1.76*) | 0.85 (2.46**) | -0.69 (-2.63***) |
| Firm Size (Log Market value) | 0.15 (4.90***) | 0.22 (6.35***) | -0.47 (-1.68*) |
| Return on Assets (current year) | 5.40 (8.92***) | 5.98 (7.22***) | 0.18 (4.38***) |
| Return on Assets (prior year) | 1.63 (2.75***) | 1.11 (1.53) | 5.27 (5.79***) |
| Return on Assets (two years prior) | 1.58 (2.90***) | 0.45 (0.76) | 1.21 (1.69*) |
| Number of business and | -0.00 | -0.00 | 0.88 |

| | | | |
|---|---|---|---|
| geographic segments | (-0.37) | (-0.47) | (1.37) |
| Directors and executives stock ownership (% of common) | 0.39<br>(1.3) | 1.25<br>(3.74***) | -0.01<br>(-2.18**) |
| Capital expenditures/Sales | -1.31<br>(-1.26) | -0.85<br>(-1.26) | 0.46<br>(1.29) |
| Years and Industry Dummies | Included | Included | Included |
| Number of Observations | 372 | 375 | 303 |
| F-statistics | 11.04 | 9.40 | 5.19 |
| (P- value) | (0.00) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.60 | 0.59 | 0.46 |

***Notes:*** *The table presents results for estimating the association between internally busy boards and firm value. Column A shows the analysis for companies with board size equal to the sample median. Column B shows the analysis for companies with number of independent board members equal to the sample median. Column C shows the analysis for companies with total committee size equal the sample median Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented

**Table 37 - OLS Regression of Firms Having Boards Within One Standard Deviation From the Median Board Size or the Median Number of Independent Board Members or the Median Total Committee Size and Internally Busy Board, Firm Valuation and Control Variables**

| | A. One Standard deviation from median board size | B. One Standard deviation from median number of independent board members | C. One Standard deviation from median total committee size |
|---|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 0.99<br>(3.38***) | 1.14<br>(3.55***) | 0.72<br>(2.43**) |
| Internally Busy Board | -0.09<br>(-3.49***) | -0.11<br>(-3.92***) | -0.08<br>(-2.41**) |
| Percentage of independent directors | -0.60<br>(-5.58***) | -0.63<br>(-6.55***) | -0.52<br>(-5.88***) |
| Firm Size (Log Market value) | -0.07<br>(-0.73) | -0.21<br>(-1.55) | -0.25<br>(-2.37**) |
| Return on Assets (current year) | 0.20<br>(14.01***) | 0.21<br>(13.75***) | 0.22<br>(14.21***) |
| Return on Assets (prior year) | 5.61<br>(17.04***) | 5.47<br>(16.26***) | 5.48<br>(15.94***) |
| Return on Assets (two years prior) | 1.34<br>(4.44***) | 1.16<br>(3.89***) | 0.96<br>(3.09***) |
| Number of business and geographic segments | 1.33<br>(5.20***) | 1.26<br>(4.89***) | 1.15<br>(4.38***) |
| Directors and executives stock | -0.01<br>(-3.21***) | -0.00<br>(-2.95***) | -0.01<br>(-4.11***) |

| | | | |
|---|---|---|---|
| ownership (% of common) | | | |
| Capital expenditures/Sales | 0.27 (2.15**) | 0.38 (2.93***) | 0.24 (1.77*) |
| Years and Industry Dummies | Included | Included | Included |
| Number of Observations | 1717 | 1380 | 1561 |
| F-statistics | 33.52 | 31.12 | 29.78 |
| (P- value) | (0.00) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.56 | 0.55 | 0.56 |

***Notes:*** *The table presents results for estimating the association between internally busy boards and firm value. Column A shows the analysis for companies with board size in the range of one standard deviation from the sample median. Column B shows the analysis for companies with number of independent board members in the range of one standard deviation from the sample median. Column C shows the analysis for companies with total committee size in the range of one standard deviation from the sample median Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented.

## Table 38 - OLS Regression of Internally Busy Board , Committee Sizes Dummies, Firm Valuation and Control Variables

| Variable | Coefficient (t-statistic) |
|---|---|
| Intercept | 0.64 (2.26**) |
| Internally Busy Board | -0.09 (-3.24***) |
| Log of board size | -0.51 (-6.56***) |
| Audit committee size=3 | 0.19 (3.14***) |
| Audit committee size=4 | 0.14 (2.49**) |
| Audit committee size=5 | 0.04 (0.79) |
| Compensation committee size=2 | 0.11 (1.01) |
| Compensation committee size=3 | 0.10 (1.04) |
| Compensation committee size=4 | 0.03 (0.35) |
| Compensation committee size=5 | 0.11 (1.14) |
| Nominating committee size=2 | -0.02 (-0.44) |
| Nominating committee size=3 | -0.05 (-1.27) |
| Nominating committee size=4 | -0.00 (-0.11) |
| Nominating committee size=5 | 0.08 (1.87*) |

| | |
|---|---|
| Percentage of independent directors | -0.09<br>(-1.02) |
| Firm Size (Log Market value) | 0.20<br>(15.99***) |
| Return on Assets (current year) | 5.58<br>(19.25***) |
| Return on Assets (prior year) | 1.08<br>(4.14***) |
| Return on Assets (two years prior) | 1.20<br>(5.34***) |
| Number of business and geographic segments | -0.00<br>(-3.44***) |
| Directors and executives stock ownership (% of common) | 0.25<br>(2.38**) |
| Capital expenditures/Sales | -0.49<br>(-1.45) |
| Years and Industry Dummies | Included |
| Number of Observations | 2243 |
| F-statistics | 36.18 |
| (P- value) | (0.00) |
| Adjusted $R^2$ | 0.55 |

***Notes:*** *The table presents results for estimating the association between internally busy boards and firm value including dummy variables for different sizes of the big 3 committees. Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented

### 3.5.5 Quadratic Specification for Board Size

As previously mentioned, board size is negatively correlated with the internal busyness of the board. Thus the smaller the board the more internally busy it is. Additionally Yermack (1996) shows that larger boards are associated with lower firm value. However the size of the board might have a U-shape relationship with firm value, meaning that for very small or very large boards firm value is lower. Because of the importance of board size to my models I performed three additionally analysis. First, instead of including the log value of board size I include the linear value of board size. Second, I include the quadratic value of board size, and third I include both. Table 39

shows that in all specifications, internally busy board are associated with lower *Q* (P<0.01). Additionally, results indicate that when included separately both the linear form and the quadratic form of board size are negatively associated with *Q* (P<0.01). However, when both specifications are included in the model only the linear form is significant (P<0.01).

**Table 39 - OLS Regression Internally Busy Board, Including Quadratic Specification for Board Size, Firm Valuation and Control Variables**

| | A. Board size | B. Board size squared | C. Board size and board size squared |
|---|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 0.24 (1.32) | -0.04 (-0.25) | 0.56 (1.97**) |
| Internally Busy Board | -0.10 (-4.24***) | -0.10 (-4.07***) | -0.11 (-4.30***) |
| Board size | -0.06 (-8.72***) | | -0.12 (-2.77***) |
| Board size squared | | -0.00 (-8.39***) | 0.00 (1.46) |
| Percentage of independent directors | -0.16 (-1.85*) | -0.17 (-1.91*) | -0.15 (-1.76*) |
| Firm Size (Log Market value) | 0.21 (16.18***) | 0.20 (16.05***) | 0.21 (16.16***) |
| Return on Assets (current year) | 5.57 (19.08***) | 5.57 (19.05***) | 5.58 (19.11***) |
| Return on Assets (prior year) | 1.07 (4.07***) | 1.07 (4.06***) | 1.07 (4.07***) |
| Return on Assets (two years prior) | 1.23 (5.48***) | 1.23 (5.47***) | 1.23 (5.46***) |
| Number of business and geographic segments | -0.01 (-3.72***) | -0.01 (-3.80***) | -0.01 (-3.65***) |
| Directors and executives stock ownership (% of common) | 0.32 (3.04***) | 0.33 (3.09***) | 0.31 (2.97***) |
| Capital expenditures/Sales | -0.51 (-1.51) | -0.52 (-1.52) | -0.51 (-1.50) |
| Years and Industry Dummies | Included | Included | Included |
| Number of Observations | 2243 | 2243 | 2243 |
| F-statistics | 40.93 | 40.75 | 40.39 |
| (P- value) | (0.00) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.55 | 0.55 | 0.55 |

***Notes:*** *The table presents results for estimating the association between internally busy boards and firm value including different specification for board size. Column A presents results using the linear value of board size. Column B presents results using the quadratic value of board size. Column C presents results using both the linear and quadratic value of board size. Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented

### 3.5.6 Number of Directors Who are Active CEOs, Proxy for External Busyness

Another proxy for the level of external busyness of the board is the number of directors who are currently active CEOs of a private or public companies. Filling the role of a CEO requires tremendous amount of time, thus leaving less time to perform a director's work effectively. Therefore, I expect the number of directors who are active CEOs to be negatively associated with $Q$. Column A of table 40 show that the number of active CEOs is significant and negatively associated with $Q$ ($P<0.05$). Column B also includes the external busyness of the board dummy. Results show that both the externally busy board dummy and the number of active CEOs are significant and negatively associated with $Q$ ($P<0.1$). For both specification boards that are internally busy negatively associated with $Q$ ($P<0.01$).

**Table 40 - OLS Regression Internally Busy Board, Number of Directors Who are Active CEOs as a Proxy for External Busyness, Firm Valuation and Control Variables**

| | A. Active CEOs | B. Active CEOs and externally busy boards |
|---|---|---|
| Variable | Coefficient (t-statistic) | Coefficient (t-statistic) |
| Intercept | 0.94 (4.24***) | 0.93 (4.19***) |
| Internally Busy Board | -0.11 (-4.35***) | -0.107 (-4.20***) |
| Log of board size | -0.55 (-7.89***) | -0.55 (-7.90***) |
| Directors Who are active CEOs | -0.01 (-2.05**) | -0.01 (-1.94*) |
| Externally Busy Boards | | -0.05 |

| | | |
|---|---|---|
| | | (-1.94*) |
| Percentage of independent directors | -0.14 (-1.55) | -0.14 (-1.64) |
| Firm Size (Log Market value) | 0.21 (16.35***) | 0.21 (16.48***) |
| Return on Assets (current year) | 5.55 (19.05***) | 5.53 (18.97***) |
| Return on Assets (prior year) | 1.06 (4.04***) | 1.05 (3.99***) |
| Return on Assets (two years prior) | 1.24 (5.51***) | 1.21 (5.39***) |
| Number of business and geographic segments | -0.00 (-3.59***) | -0.01 (-3.66***) |
| Directors and executives stock ownership (% of common) | 0.30 (2.89***) | 0.30 (2.87***) |
| Capital expenditures/Sales | -0.53 (-1.56) | -0.54 (-1.60) |
| Years and Industry Dummies | Included | Included |
| Number of Observations | 2243 | 2243 |
| F-statistics | 40.53 | 40.06 |
| (P- value) | (0.00) | (0.00) |
| Adjusted $R^2$ | 0.55 | 0.55 |

***Notes:*** *The table presents results for estimating the association between internally busy boards and firm value including number of directors who are active CEOs as a proxy for external busyness. Column A presents results including the number of directors who are active CEOs. Column B also includes the external busyness dummy. Significance of the t-statistic: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Two-tailed tests are* presented

## 3.6 CONCLUSIONS

This paper examines the association between internal board commitments, as measured by membership within the big three committees, and firm value. While prior research concentrates on external commitments of board members it ignores internal workload. This examination is important because all firms need to set board size, committee sizes and committee memberships and these decisions can ultimately impact firm performance and value. The findings of this paper highlight the tradeoffs between board size and internal board busyness. Yet, while it might be difficult to change the size

of the board, adjustments to committee size and member allocation within these committees are practical, even in the short run.

I explain how time constraints with respect to external commitments are fundamentally different from time constraints on each specific board. I further argue that it is more likely that the time allocated to each board is relatively fixed, and therefore, time spent on any additional internal responsibility is likely to come at the expense of another. I contend that an excess number of committee assignments for the majority of board members, which I set at two committees, can obstruct board members from performing non-monitoring/compliance tasks. My overall results highlight the tradeoffs between excess compliance and monitoring effort to firm value.

Consistent with my expectations, I first find that internally busy boards are associated with lower firm value. In contrast to the sensitivity of externally busy board measures (see Ferris et al. 2003 and Fich and Shivdasani 2006), I find that my measure of internally busy boards is robust to various specifications. Further, the literature on board size consistently shows that smaller boards are more effective (with the exception of Coles et al. 2008). Related to this stream of research, I expect that larger boards that staff committees efficiently should be able to reduce the average internal compliance/monitoring pressure from individual directors. I find that larger boards that are not internally busy are associated with higher $Q$.

I then examine the two other components of internally busy boards, committee size and the allocation decision. I find that controlling for committee size does not alter my results and conclude that the allocation decision of board members is incrementally important. To further study the allocation decision I examine whether the decision of

boards to free directors from these committees is important. Consistent with my expectation, I find higher firm value among boards that are able to free directors. This result further highlights the role of member staffing and its influence over the effectiveness of the board. Finally, this study intersects with the literature on externally busy boards. Using my sample, I confirm the finding of Fich and Shivdasani (2006) and find that both externally busy boards and internally busy boards are associated with lower *Q*. This implies that, in general, boards that are busier are less effective in advising. However, I do not find a further decline in firm value among boards that are both internally and externally busy.

# 4 Summary and Conclusions

This dissertation examines both the monitoring and advising role of boards of directors and its committees. I use an integrated approach to study board committees' work and examine tasks performed by different committees. Specifically, instead of studying each committee in isolation, I examine the work performed by two important committees that have recently been subject to increased regulation, the compensation and audit committees. Additionally, I examine how a decision to staff the three required committees (i.e. audit, compensation and nominating) with independent board members affects firm value. The overall motivation for this dissertation originates from the need to understand the dual role of the board with respect to monitoring and advising as well as understand the interplay between board committees.

The first essay of this dissertation examines how social ties between management and independent board members, who serves on the audit and compensation committee, affect their ability to perform their duties. My findings suggest that social ties with compensation committee members are associated (every thing else equal) with higher CEO compensation. These findings are consistent with agency theory that predicts higher compensation for CEOs who have greater power over their board. On the other hand, I find that social ties with audit committee members are associated with higher quality internal controls and better financial reports. These findings suggest that social ties, in this context, can facilitate better collaboration and information sharing between board members and management, consequently leading to improved outcomes.

Table 41 shows a summary of the hypotheses results of the first essay

**Table 41 - Summary of Results for Essay 1**

| Hypotheses | Prediction | Results |
|---|---|---|
| H1a: Reciprocal | Compensation(+) | Not Supported |
| H1b: Inside To Independent | Compensation(+) | Supported |
| H2:Compensation committee Inside To Independent | Compensation(+) | Supported |
| H3a: Inside To Independent | MW (-) | Supported |
| H3b: Inside To Independent | Restatements(-) | Supported |
| H4a: Audit Committee Inside To Independent | MW (-) | Supported |
| H4b: Audit Committee Inside To Independent | Restatements(-) | Supported |

Findings of the first essay, which are summarized in Table 41, highlight several important insights. First, these results demonstrate that social ties between management and independent directors have an effect only when these social ties involve directors that are directly responsible for an outcome. Specifically, social ties with directors that serve on the compensation committee affect CEO compensation and social ties with directors that serve on the audit committee affect the quality of the financial reporting process. Second, my findings suggest that the influence of social ties depends on the task that board members need to perform and consequently can have either a desirable or an undesirable effect. These results highlight the importance of examining how certain board member characteristics relate to tasks performed by more than one committee. Thus, in order to understand general factors that affect board committees and their work, future studies should examine, in a common sample, the work of more than one committee. Third, while social ties between management and independent directors have been generally perceived negatively by governance activist, in certain cases, social ties can also have favorable results.

The overall results of the first essay emphasize the complexity of board responsibilities and composition (in particular social relatedness to management) especially with respect to improvements in the advising and monitoring roles of the board. Future research should aim to disentangle board tasks that could benefit from the existence of social ties, from tasks that have a detrimental effect on their outcome. The guiding principle for such an examination is, any task that requires monitoring wherein the management objective might not be aligned with shareholders, social ties might impair the ability of the board to effectively accomplish that task. However, any task that requires collaboration, information sharing and advice seeking might benefit from social connections. Additionally, future research could examine how social ties among independent board members themselves affect board decisions. In theory, as social ties among independent board member increase, the cohesiveness of the board and its decisions should also increase.

The second essay examines the association between internally busy boards, those in which the majority of independent directors serve on two or more committees, and firm value as measured by Tobin's Q. Findings indicate that firms with internally busy boards have lower values of Q. Further, I find that this association is more pronounced in large boards that, presumably, have greater flexibility to maintain a non-internally busy board but still fail to do so. Finally, results indicate that boards that are able to free directors from compliance and monitoring activities (i.e. the three mandatory committees) exhibit higher firm value. Table 42 shows a summary of the hypotheses results of the second essay.

**Table 42 - Summary of Results for Essay 2**

| Hypotheses | Prediction | Results |
|---|---|---|
| H1: Internally Busy Board | Tobin's Q (-) | Supported |
| H2: Internally Busy Board * Board Size | Tobin's Q (-) | Partially Supported |
| H3: Free Directors | Tobin's Q (+) | Supported |
| H4: Internally Busy Board * Externally Busy Board | Tobin's Q (-) | Not Supported |

The main question addressed by the second essay is how joint allocation decisions of independent board members to all of the required committees affect members' ability to allocate sufficient time to general board work. This question is important because every board needs to decide how to staff required committees with independent board members. However, to the best of my knowledge, the literature is silent and best practices are absent with respect to the consequence of such allocation decisions. Unfortunately, there are tradeoffs between different allocation strategies. On the one hand, if directors serve on more than one committee they could gain diverse knowledge from performing their different responsibilities. The use of this vast knowledge could then be used to contribute to firm performance. Thus, following this logic, directors should serve on multiple committees. On the other hand, the most valuable resource a director has is time, and therefore, the ability of a director to master the work and knowledge of more than one committee and at the same time maintain a comprehensive view of the firm is questionable. Thus, following this logic, most directors should specialize and serve on no more than one committee, leaving them sufficient time to master and participate in general board decisions such as strategy formation. With respect to firm value, results of this essay support the latter alternative.

I recognize, that this essay only provides the groundwork for understanding how to best allocate board members into committees. Future research should further examine this question. Additionally, future research should also study other consequences of the joint committee allocation decision beside the internal busyness of directors. For example, how would the requirement that each audit committee should have personnel with financial expertise affects other committees? On the one hand financial expertise was demonstrated to improve firms' financial reporting and internal control quality. On the other hand, it is not clear whether directors that are financial experts can also perform well on other board tasks that do not pertain to the financial reporting process. Thus, including more financial experts on the board might come at the expense of other directors with other skills. Other question that should be examined is how decisions of one committee affect the work or decisions of another, and whether these decisions create conflict of interest between different committees.

To summarize the results of the two abovementioned essays, they both emphasize the need to examine the advising role taken by the board of directors and its committees and how factors associated with effective monitoring might not necessarily contribute to improved advising. Furthermore, they demonstrate the importance of examining the role of more than one board committee, and how joint decisions that pertain to all of these committees affect firms.

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