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Agency, Governance, and Performance in the Securities Industry

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SUMMARY

Motivated by a recognition of the importance of financial institutions, a gap in corporate governance literature, and the recent financial crisis, this dissertation examines the economics of financial firms, their governance practices, and governance-performance links in such firms.

The research combines an extensive literature review, microeconomic modeling, secondary data collection, and a set of empirical analyses. It focuses on the board of directors as the key governance mechanism that is subject to policy making by both public and private decision makers. Within the wide range of financial firms, it focuses on firms in the business of managing client assets, where the most obvious gap in governance literature is.

Literature review

The literature review concentrates on the relation between board characteristics and corporate performance. It further examines in detail the governance literature on financial firms (which makes up a small portion of overall governance research). A synthesis of findings from this review motivates and informs the theory, data collection, and empirical analyses.

Corporate board characteristics range from those which are straightforward to measure and observed in disclosures (e.g., board size), to those which are hard to measure and not disclosed (e.g., interaction among directors). For some board characteristics, empirical research consistently suggests a certain

performance effect. These include board size (smaller is better), classification status (not classified is better), multiple directorships (less busy directors are better). For some other board dimensions, despite numerous attempts, the literature so far is inconclusive as to the presence or direction of an effect. These include board independence, CEO/chair duality, and director incentives. Finally, for some other board characteristics, the literature is yet too thin to indicate any pattern. These include, but are not limited to, board activity, board committees, and interlocks, which I have not considered as covariates in my estimations. As the board is not the only governance mechanism, researchers control for others, typically executive incentives and ownership structure.

The literature on governance structures in financial firms asserts the presence of multiple agencies and emphasizes regulation's role. Both of these forces might call for different governance arrangements compared with non-financials. There is some empirical evidence, obtained from the banking sector, that the structure of financial-firm governance is different from that of industrial firms in terms of board size, board independence, CEO/chair duality, blockholder ownership, and executive and director ownership. The direction of these differences overwhelmingly points at weaker governance (e.g., lower executive ownership coupled with higher CEO/chair duality). In line with governance research in general, the existence of multiple governance mechanisms is probed, but findings are inconsistent. Empirical analyses have yet to cover securities firms.

The stream of literature assessing the relationship between governance and firm performance in the financial sector has so far focused on commercial banking with some exploration of funds and insurers. Level of board independence is found to be either negatively related with performance or insignificant. Board size, officer ownership, and blockholdings, to the extent that they are used as explanatory variables, exhibit a similar pattern. Findings on other board or governance variables are too thin to provide any guidance.

Overall, the literature on financial-firm governance is still in its infancy compared with governance research in general, and has concentrated on commercial banking and funds. Mutual and closed-end funds are actually investment instruments (products) offered by securities firms (brokerage and asset-management firms). Securities firms themselves are governed at a different level; therefore, findings from fund-governance research are clearly not applicable to securities firms. So far, no empirical analysis has covered brokerage or asset-management firms.

The financial firm as dual agency

Financial institutions are trusted with the money of their clients, creating an additional agency problem between *clients* and financial-firm management, in addition to that between *stockholders* of the firm and its management (the standard agency problem). Moreover, at the individual-firm level, this additional agency problem might matter more than the standard agency problem, as proxied by the value of *client assets* under management relative to the value of *stockholder assets* under management.

Here, the umbrella term "financial firm" does comprise the various sub-sectors of the vast finance industry (the basic duty of the manager to the client is essentially equivalent across sub-sectors within the broader industry). I use the pure-play asset-management firm for modeling purposes.

Another major difference of financial firms from non-financials is being subject to a regulatory regime that augments the monitoring of the manager by shareholders and clients. Such regulation is provided by dedicated federal and/or state-level agencies for each sub-sector, sometimes complemented by self-regulatory organizations.

Regulation matters because it modifies the behavior of managers in ways believed to be in the interest of various stakeholders and therefore has implications for corporate governance. It is not uncommon for governance researchers to omit regulated industries (typically utilities and financial sectors) from analysis, usually offering no other justification than these industries' being regulated. I recognize the presence of regulation as a major component of the financial firm's difference from the non-financial that might affect managerial behavior, and explicitly incorporate it into models.

I first provide visual and informal descriptions of how the economics of financial and non-financial firms diverge. In the manufacturing firm, the manager is the fiduciary of stockholders only. He does interact with customers (and suppliers) in the regular course of business, but he is *not* tasked with maximizing the welfare of customers or any other party other than shareholders. In the financial firm, however, *the business itself* consists of the management of client assets. Thus, the manager is an agent of both the client and the stockholder. He is tasked with both maximizing shareholder value and creating a high positive return on client funds. In fact, the manager creates a profit for the stockholder by means of creating value for the client.

I present four models of managerial utility maximization under moral hazard to formalize the analysis. Moral hazard revolves around the issue that the agent's effort level cannot be observed by the principal (i.e., hidden action problem). I cover the two major problems a principal faces: motivating an agent to work hard (potential shirking), and motivating an agent to work honestly (potential malfeasance). For each type of moral hazard, first the non-financial firm is analysed (the baseline case), and then the model is extended to the financial firm. The extension occurs through the recognition that (1) output for the shareholder is a function of the output for the client, (2) the regulator is present as additional monitor and potential punisher.

Model results provide implications about the effort level of the agent-manager and how he might be incentivized: about productive effort in the shirking scenario, and about destructive effort in the malfeasance scenario.

As concerns shirking, managerial effort is driven not only by the contract between the shareholder and the manager, but also by that between the shareholder principal and the client principal and by the amount of trust placed in the manager by the client. As concerns malfeasance, dishonest managerial effort is discouraged by the differential monitoring scheme that includes not only the stockholder principal as overseer but also the client principal and governmental and sectoral regulators.

Overall, in the financial firm, the existence of a second principal and a third monitor further shape the incentives of managers. Recall that the board of directors exists to bridge the gap between ownership and control, i.e., between the stockholder principal and the manager agent. If the nature of the financial firm with another principal of the same agent and regulatory oversight provides for a better alignment of manager and stockholder interests, then this would suggest a smaller role for and smaller impact by the board. Hence, we could hypothesize that the board has a less important duty in financial firms than in non-financials, and that the performance of financial firms is less sensitive to board oversight compared with non-financials.

Empirical analysis

Keeping with the empirical tradition in governance research, I model firm performance as a linear function of several variables reflecting board structure, other governance mechanisms, and firm-level covariates. The panel nature of my data allows for inclusion of fixed effects for years and firms. Firm

fixed effects would capture unobservable characteristics such as corporate culture. Year fixed effects would capture temporal influences that affect all firms such as a stock-market decline.

As informed by the literature review, I measure corporate performance in terms of firm value and profitability. The proxy for firm value is Tobin's Q, roughly the ratio of the market value of assets to the book value of assets. The measures for accounting profitability include return on assets and return on equity (annual profit scaled by average assets or shareholders' equity, respectively). In terms of board governance, I consider board size, degree of independence, duality of leadership, presence of classification, and multiple directorships. Other governance mechanisms that serve as controls include share ownership by directors, the CEO, and blockholders, as well as incentive compensation for the CEO and directors. I also include firm-level covariates as controls: size, growth opportunities, leverage, diversification, and age.

The starting point for the sample is the universe of public firms filing with the SEC. I identify all U.S. public firms that are commonly referred to as "securities firms": asset-management firms, brokerage firms, and investment banks (underwriters). I choose the period from 1999 through 2007 for sampling because it contains a complete stock market cycle and multiple governance reforms, expected to provide sizeable variation in corporate performance and governance structures, respectively. After eliminations on data availability grounds, the final sample consists of 32 securities firms observed over a period of nine years, yielding a panel of 288 firm-year observations. Sample firms as a whole were managing $9.5 trillion and had total market capitalization of $430 billion at the end of 2007. This set of firms provides a well-rounded distribution of firms by size, mitigating possible concerns of small-firm or large-firm bias.

I hand-collect and code variables regarding the board of directors, executive compensation, and stock ownership from proxy statements or annual reports filed by public companies. I develop more accurate measures of board characteristics than existing governance research by considering entire years instead of daily snapshots for directors. I rely on Compustat for financial-statement data and CRSP for market-capitalization data.

Summary statistics suggest that the governance of securities firms does not look particularly strong. The average securities-firm board has nine or ten members, exhibits CEO & chair duality, is not classified, has a clear majority of outside members, but lacks a majority of independent directors. This paints a mixed picture in terms of expected monitoring effectiveness. On the one hand, low occurrence of classification implies accountable directors that stand for re-election each year. On the other hand, an independence

level of only 45%, where independents are outnumbered by insiders and affiliates, suggests low monitoring capability by the board. While executive and director incentives look fine (e.g., variable pay has 77% share in CEO compensation), ownership structures hint at potential dominance by insiders and affiliates (e.g., 13% ownership by CEO versus 9% ownership by independent blockholders). The overall picture might well be a result of the board sharing monitoring duties with clients and regulators.

Out of the five major board dimensions we are considering, financial firms seem to differ from non-financials along two dimensions only: board independence and board classification. The disparity in terms of board independence is striking (around 45% for financials vs. around 70% in non-financials) but not conclusive as there might be some measurement issues. The difference in terms of board classification (around 45% in financials vs. 60% in non-financials) would suggests better governance in financials, but does not seem to matter for performance.

In fact, board governance seems to matter for securities-firm performance only tangentially. Under the comprehensive specifications including allowance for first-order auto-regression over years (GLS estimation), no board characteristic is statistically significant for firm value, and only board size is significant for profitability. Board size does not seem to have much economic importance either. Failing to detect a performance effect for board independence or dual leadership is not surprising as evidence about these is inconclusive in governance research in general. However, board classification and board busyness have been found to negatively affect firm performance in prior research. Lack of sensitivity of both firm value and profitability to these two characteristics, in addition to a small effect size for board size, might well indicate that securities-firm performance is indeed less sensitive to board governance than non-financial firms.

CHAPTER 1: INTRODUCTION

This study's starting point is a recognition of the importance of financial firms and the detection of a gap in the governance literature. Financial institutions are the centerpiece of financial markets: they fulfill the intermediary function between suppliers and demanders of funds, and they fulfill a fiduciary function in the management of the wealth of individuals and businesses. Despite the tremendous growth in governance research over the last two decades, however, the governance of financial institutions has garnered scant attention from academe. Some evidence exists, but it's by and large limited to commercial banks and mutual funds. To the best of my knowledge, no published paper examines governance structures or its links with corporate performance in the securities industry (comprising securities brokerage, underwriting, and asset management companies).

This industry is where the recent economic crisis developed, however. Investment firms created the complicated financial products out of mundane mortgages, contributed to the building of large bubbles in real-estate and financial markets, and eventually started collapsing when the bubbles burst. The damage quickly spread to other sectors of the economy and triggered a recession. Understanding how financial firms, in particular securities firms, function and how they can be made to perform better are prime questions facing investors and policy makers.

Research questions

This dissertation undertakes to answer two broad groups of questions. The first group seeks to explore the nature of financial firms:
• In what ways are financial institutions different from non-financial firms?

- If any, what kinds of incentives could these differences create for financial-firm executives with potentially adverse or favorable impacts on financial-firm shareholders and clients?

The second group seeks to describe actual governance practices in financial firms:
- How do corporate-governance mechanisms operate in financial institutions?
- How are these mechanisms linked to financial-firm performance?
- Do these findings differ from those related to non-financial firms?

Corporate governance mechanisms and institutions are manifold; a single study attempting to cover all or multiple mechanisms two would be far too ambitious. The criterion adopted here is the extent to which that mechanism lends itself to policy making by public as well as private decision makers. In light of this criterion, this study focuses on the mechanism of board of directors.

Within the wide range of financial firms, this dissertation focuses on firms in the business of managing client assets. This includes pure-play asset-management firms (e.g., Franklin Resources), comprehensive securities groups with brokerage and advisory businesses (e.g., Charles Schwab), and integrated investments groups with brokerage, advisory, and investment-banking units (e.g., Morgan Stanley).

Methods

This dissertation combines an extensive literature review, microeconomic modeling, secondary data collection, and a set of empirical analyses. The literature review concentrates on the relation between board characteristics and corporate performance. It further examines in detail the governance literature on financial firms (which makes up a small portion of overall governance research). A synthesis of findings from this review motivates and informs the theory, data collection, and empirical analyses.

The theoretical modeling exercise extends a typical principal-agent model by incorporating an additional agency problem in financial firms. Looking at two different moral hazard settings, model variations demonstrate the implications of the co-existence of two principal-agent problems.

Data on a set of 32 securities firms that together manage about $10 trillion of client assets have been hand-collected from public corporate disclosures and culled from two standard financial databases. Informed by the literature review, the data include variables for company performance, board

characteristics, and select other governance mechanisms. Descriptive analysis is used to spot divergences from non-financial firms.

Economic research on corporate boards has typically embraced empirical analysis exploring links between board practices and various performance measures. This dissertation applies similar empirical models to financial institutions, treating specific board practices as key independent variables and selected corporate performance measures as dependent variables. The panel nature of the data allows for the inclusion of year and firm fixed effects, with regression equations estimated alternatively by OLS or GLS estimations (the latter assuming first-order autoregression in the disturbances).

Contribution to literature

This dissertation contributes to the literature in several ways:
* Modeling the co-existence of multiple agency problems inherent in financial firms, augmenting existing streams of literature on single agency relationships,
* Describing board practices of securities firms for the first time and highlighting any differences from those of non-financial firms,
* Characterizing the relationships between board practices and securities-firm performance for the first time, and highlighting any differences from findings related to non-financial firms.

At a higher level, this research hopes to fill a perceived void in the understanding of how financial institutions operate and how they differ from non-financial firms.

Policy Relevance

This dissertation aims to inform several types of public and quasi-public decision makers about the nature of financial institutions and their governance practices as a potential input to their future decisions. First and foremost, legislators would be informed. Federal and state regulators in charge of monitoring capital-market participants and enforcing securities laws like the SEC would be obvious audience. Last but not least, self-regulatory organizations like NASD and NYSE, which establish and enforce rules for financial-market participants, also constitute important decision makers.

CHAPTER 2: LITERATURE REVIEW

In this chapter, I first provide an overview of the role of corporate boards and of research describing how boards are structured. This is followed by a summary of the literature defining dimensions of board governance and assessing their impact on firm performance. As the board does not exist in a vacuum, the subsequent section briefly reviews research on other major governance mechanisms. Finally, I provide a detailed overview of the relatively limited literature on the governance of firms in the finance industry. Governance studies in various disciplines since the 1970s easily amount to a few hundred by a rough count. This review focuses on economics and finance articles published since 1990 and pertinent to the objectives of the research.

Board of directors – function and structure

Hermalin and Weisbach (2003) note that governing boards exist all over the world in a large variety of organizational types. As boards predate state laws and stock exchange rules, they must be a market solution to an organizational design problem, one that helps reduce agency costs.   Providing management with strong contractual incentives could be one solution to the agency between the firm's shareholders and managers. However, in the typical joint-stock corporation shareholders are too diffuse and vulnerable to free-riding and too uninformed to provide such incentives. Even when a large shareholder is present who might have sufficient incentives for monitoring of management, the venue for such role is usually the board. Hermalin and Weisbach also note, however, that theory has yet to derive the board as (part of) the equilibrium solution to the contracting problem between owners and managers.

Hillman and Dalziel (2003) list the specific activities boards are in charge of: monitoring the CEO in general, monitoring strategy implementation, planning and executing CEO succession, and evaluating and compensating the top management of the firm. The common denominator in all these is the task to ensure that management works in the interests of shareholders.

In addition, directors can come from a variety of backgrounds: legal and financial services, corporate experience elsewhere, government career, and community service. Thus they usually bring important expertise, experience, and skills that should enable them to advise the CEO on strategy development and execution. The advisory function of the board is emphasized and researched by scholars associated with a management-grounded theory of boards called "resource dependence" (e.g., Pfeffer 1972, Boyd 1990). As such, directors might be instrumental in linking the firm to important third parties, facilitating access to capital, and bolstering the public image of the firm, among other things (Hillman and Dalziel). One would expect that better provision of such resources contributes to firm performance. Finance and economics literature on boards, however, is grounded in agency theory and typically ignores the advisory function of the board and director characteristics that such a function would demand. This dissertation follows suit.

In a rare digression from the inside-versus-outside-director debate in mainstream board research, Baysinger and Butler (1985) argue that the board *should* have a mix of insiders and outsiders. They classify a board into three components: executive, monitoring, and "instrumental." Directors in the executive component are either aligned with top management or are top managers themselves, providing expertise and a pool of CEO successors. The monitoring component is comprised of truly independent outsiders. They represent ownership interests and their own reputations as monitors, and may take longer-term perspectives than insiders. The instrumental component, unlike the monitoring component, can be a source of managerial wisdom and link different organizations together. Baysinger and Butler ultimately contend that extremes in board composition in favor of any single component may adversely affect corporate performance and that it is unlikely that the optimal composition is uniform across firms. This reasoning may well explain why research so far has failed to find a positive association between board independence and performance (I provide empirical details in the related section).

Formal economic theory on boards is very rare. Hermalin and Weisbach (1998) do develop theory on board monitoring and derive several predictions regarding board composition and functioning. A key feature of their model is that the level of board independence is the outcome of a bargaining game between the board and the CEO. In case of good firm performance, they predict executive bargaining

power to increase and independence to decrease as a result. In contrast, underperformance reduces the CEO's value compared with potential candidates, and board independence and the likelihood of CEO replacement increase as a result. Other notable predictions include a decline in board independence with increasing CEO tenure.

A stream of empirical literature examines the determinants of board composition, and in particular, whether and how firm characteristics or performance affect board composition. For instance, Coles et al. (2008) report that larger, more diversified, and more leveraged firms have larger boards and that boards of R&D-intensive firms have a larger fraction of inside directors. Also, part of the literature on governance-performance relationships explores potential endogeneity of board structure to past performance. According to Hermalin and Weisbach (1988), poor firm performance increases the likelihood that inside directors leave the board and outside directors join. Also, as a CEO approaches retirement, replacement candidates from the inside tend to be added to the board. After a CEO change, inside directors leave the board consistent with a succession hypothesis. Denis and Sarin (1999) find that large changes in board composition tend to occur after very poor performance and around CEO change, but also report that firms which substantially increase board independence had above-average stock returns in the previous year. Yermack (1996) finds that poor performance is associated with both director departures and director arrivals, but finds no evidence that boards either expand or contract as a result. Klein (1998) also fails to find that performance affects board composition; firms in the bottom quintile of stock returns are no more likely to add independent directors than those in the top quintile. Bhagat and Black (2002) find no correlation between current board composition and recent firm profitability or growth.

Thus, empirical literature is not conclusive that board characteristics are endogenous, however, persistent concerns that they *might* be so have traditionally complicated the estimation of effects of governance on firm performance. Empirical papers typically exert care not to make *causal* arguments out of their findings, emphasizing *associations* of governance and performance instead[1].

Board characteristics and their effect on firm performance

As explained above, boards can be scrutinized along various dimensions. In theory, each dimension could influence how well the board can monitor and shape CEO behavior, impinge on decisions, and therefore matter to value creation for shareholders. Board dimensions range from those which are

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[1] However, papers that cannot isolate causal effects have been published in respected journals such as the Journal of Financial Economics.

straightforward to measure and observed in disclosures (e.g., board size), to those which are hard to measure and not disclosed (e.g., interaction among directors). Research has tried to capture the link between board characteristics and firm outcomes to the extent that such characteristics are observed.

Board size

Jensen (1993) and Lipton and Lorsch (1992) suggest that large boards can be less effective than small boards. As boards increase in size, director free-riding and required communication/coordination effort within the board increase. Despite the incremental expertise additional directors might bring on board, beyond a certain point the loss in monitoring ability should outweigh the benefits. Directors also might be less likely to speak up and challenge the CEO in the presence of a larger group: Jensen calls this the "great emphasis on politeness and courtesy at the expense of truth and frankness in boardrooms." Hermalin and Weisbach (2003) note that CEOs can act strategically by playing one faction of directors against another (divide-and-conquer strategy), which becomes easier to do with larger boards. Lipton and Lorsch and Jensen in unison argue that directors are less likely to function effectively when board size exceeds eight. However, Raheja (2006) suggests that optimal board size would depend on director and firm characteristics and therefore larger boards may be optimal under certain circumstances.

Empirical research generally finds that smaller boards associate with better corporate outcomes. In an authoritative and oft-cited study, Yermack (1996) finds negative links between firm performance, as measured by Tobin's Q or ROA, and board size using panel data of large industrial corporations. Further, analyzing stock returns around announcements of considerable changes in board size (involving four or more directors), he finds that investors welcome contractions and disapprove expansions. He also finds that firms with smaller boards exhibit a stronger relationship between firm performance and CEO turnover than firms with larger boards. Further, he finds that CEO pay's sensitivity to performance falls with board size, suggesting that small boards give CEOs larger incentives and force them to bear more risk than do large boards. Kini et al. (1995) present evidence that board size shrinks after underperforming firms are acquired. Core et al. (1999) report that CEO compensation is higher when the board is larger. Post-Yermack studies typically find an inverse relationship between firm value and board size (e.g., Fich and Shivdasani 2005, 2006, Vafeas 1999). Challenging Yermack's findings in part, Coles et al. (2008) find that Tobin's Q increases with board size in "complex" firms (but confirm a negative relationship for "simple" firms). Their proxy for complexity is a composite of diversification, size, and leverage. Leverage, however, is recognized as a separate governance mechanism in the broader governance literature. Cheng (2008) reports that longitudinal variability in firm performance (Tobin's Q,

ROA, or stock returns) is negatively associated with board size. His findings support the notion that larger boards require more compromises and make decisions that involve less risk.

Board independence

Management directors (the CEO and typically several of his/her lieutenants) cannot be expected to monitor themselves. Thus, independent directors are believed to play the monitoring role in boards. Fama (1980) and Fama and Jensen (1983) argue that such directors have incentives to build reputations as expert monitors. Until the late 1980s, researchers simply equated outside (non-management) director status to independence from management. However, that does not necessarily hold. For instance, a non-management director who sells legal services to the firm cannot be expected to challenge the CEO. Similarly, the independence of the firm's retired executives is doubtful. Since the late 1980s, almost all studies differentiate between outside directors who have personal or business relationships with the CEO or the corporation (affiliated or "grey" directors) and those who have no relation with the firm other than sitting on its board (independent directors[2]).

Empirical research is inconclusive about the existence of a relationship between board independence and firm performance. Hermalin and Weisbach (1991) and Bhagat and Black (1999) find no relation between outside director proportion and Tobin's Q or ROA. Bhagat and Black (2002) check long-term stock and accounting performance and also fail to find an association. To account for potential endogeneity of board composition, these two papers instrument for current performance with lagged performance, but their results don't change. Rosenstein and Wyatt (1990) find that the stock market responds positively to company announcements regarding the addition of outside directors to the board. However, in a follow-on paper (1997) they also find that, under some circumstances, adding an insider to the board also increases stock price. Baysinger and Butler (1985) find that firms with higher proportion of independent directors at the beginning of a decade end up with superior accounting performance at the end of the decade. While their approach sterilizes potential endogeneity of board composition, arguing that today's directors will impact performance ten years later is far fetched. Barnhart and Rosenstein (1998) find no correlation between independence and Tobin's Q using both OLS and several simultaneous estimations. Agrawal and Knoeber (1996) report a negative association between outside director percentage and Tobin's Q. For only supermajority-independent boards, Bhagat and Black (1999) confirm Agrawal and Knoeber's negative finding.

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[2] Recently, however, some studies categorize directors as inside, affiliated, or outside, labeling as outside what's conventionally called independent. Therefore one must exercise caution in comparing studies.

Empirical evidence on relationships between board independence and major firm decisions, however, is consistent and suggests that higher board independence leads to decisions in shareholder interest. Weisbach (1988) finds that when boards are dominated by independent directors (at least 60 percent), CEO turnover is more sensitive to firm performance, suggesting outside directors are better monitors of CEOs than inside directors. Along this line, Borokhovich et al. (1996) and Huson et al. (2001) find that outsider-dominated boards are more likely than insider-dominated boards to replace a CEO with someone from outside the firm. Cotter et al. (1997) find that, during tender offers, target firms with boards containing a majority of outside directors receive on average a stock return 20 percent higher than firms with boards without a majority of outsiders. Byrd and Hickman (1992) similarly find that, in tender offers, bidding firms where independent directors hold at least 50 percent of the board have significantly higher announcement-date abnormal returns than other bidders. Brickley et al. (1994) find that investors react positively to poison-pill[3] announcements when the board has a majority of outside directors and negatively when it does not. This finding is supported by evidence in McWilliams and Sen (1997), but contested by that in Sundaramurthy et al. (1997). Lee et al. (1992) find that in management buyouts, where CEO interests clearly oppose those of existing public investors, shareholders receive higher premia if the firm has a majority-independent board.

Board leadership

The chairperson is arguably the most important figure on a board, assuming that she sets the agenda, directs discussions, and moderates any debates. Historically, only three percent of large U.S. companies have had chairs who are not current or former CEOs of the firm (Finegold et al., 2007). The case in which the CEO also holds the board chairman position is called "duality." Duality obviously conflicts with the oversight role of the board: one cannot expect the CEO to monitor herself. Therefore, duality at face value should imply weaker governance. Finkelstein and D'Aveni (1994) argue that independent board leadership is especially beneficial when the firm's performance is fine and potential for CEO entrenchment is high. On the other hand, independent leadership may be detrimental when the firm has been performing poorly and there's need for "unity of command" (Rhoades et al., 2001).

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[3] Poison pills are mechanisms that firms might use to raise to their price in case of takeover bids. One popular version is issuing stock to existing shareholders other than the hostile bidder, which makes the intended acquisition more costly to the suitor.

Empirical research on the existence of a relationship between dual leadership and firm performance is thin and inconclusive. Yermack (1996) finds a marginally negative association between CEO/chair duality and firm value, supported by similar and stronger evidence in Chan and Li (2008). Performing several tests, Baliga et al. (1996) conclude that the type of board leadership does not seem to matter. They find no significant investor reaction to announcements of a switch in duality (in either direction). They also find no change in short-term profitability after status switches. Further, comparing market-value added by dual and non-dual firms over a five-year period, they detect no significant difference. Combs et al. (2007), however, report significantly more positive stock-market reaction to CEO deaths under duality, suggesting incremental investor relief over this type of unexpected change.

Board classification

Typically, directors are elected for one-year terms at annual meetings, giving shareholders the opportunity to retain or replace directors each year. Also, annual elections facilitate hostile takeovers since the suitor can propose its own slate of directors and have the entire board replaced at once. An alternative regime is "classification" whereby the board is divided into classes and only one class of directors stands for election each year. In most states, corporation law allows a maximum of three classes which companies typically use to the limit (Bebchuk and Cohen, 2005). On the one hand, staggered elections might improve stability and continuity in the board and encourage a longer-term perspective. Classification also works as a takeover defense, however, since a potential acquirer must win two annual proxy contests in a row, and thereby enhances managerial entrenchment. It surely reduces director accountability to shareholders since directors face removal threat every three years only.

Empirical research finds that classification associates with worse corporate outcomes. Bebchuk and Cohen (2005) and Faleye (2007) find that classified boards are associated with reduction in firm value as measured by Tobin's Q, robust to other takeover defenses and endogeneity concerns. Faleye also finds that staggered elections reduce both the probability of forced CEO takeover and the sensitivity of turnover to firm performance (even when outsiders dominate the board). Further, he detects evidence that CEO pay's sensitivity to performance is also reduced with classification. Mahoney and Mahoney (1993) and Faleye find negative stockholder reaction to classification announcements, although Jarrell and Poulsen (1987) don't. Faleye also notes that firms adopting classification have lower blockholder ownership than those eliminating classification, consistent with "rationally ignorant atomistic shareholders." Bebchuk et al. (2002) report that a classified board almost doubles the odds that a takeover target remains unacquired, and that in completed acquisitions a classified board does not confer higher premiums for shareholders.

Bebchuk (2005) documents that boards commonly ignore shareholder-approved resolutions calling for de-classification.

Multiple directorships

There are alternative hypotheses on why a given director occupies seats on multiple boards and how such occupation should affect corporate performance. One possibility is that high-quality directors are asked to sit on more boards. Service on multiple boards can also provide a director with diversity of experience. However, directors might also accumulate board seats if they establish a reputation for not making trouble for CEOs. Either way, it is theoretically uncertain whether directors in high demand contribute to the performance of the firms they oversee or experience deterioration in monitoring ability due to over-commitment. The literature is not concerned with inside directors' multiple appointments. Ferris et al. (2003) report that multiple directors are more active participants in board processes: they serve on more board committees, attend more committee meetings, and chair more committees. Higher participation does not necessarily imply better governance, however.

While relatively limited in number, empirical studies find that multiple directorship of outside directors leads to poor results for investors. Shivdasani (1993) finds that when outside directors hold more external directorships, it is less likely that the firm will be acquired in a hostile takeover. Ferris et al. (2003) fail to find a relation between average directorship per outside director and firm value. Using a different measure of director "busyness," Fich and Shivdasani (2006) detect a different and persistent pattern. They report that boards where a majority of independent directors hold three or more directorships are associated with poor outcomes. Such companies exhibit lower value, lower profitability, and lower sensitivity of CEO pay to performance (robust to endogeneity concerns). Moreover, sensitivity of CEO turnover to performance with majority-independent but busy-director-dominated boards is not distinguishable from that with insider-dominated boards. Also, announcements of busy director departures create positive abnormal stock returns. Core et al. (1999) find that busy directors set excessively high CEO compensation which in turn depresses firm performance. Shivdasani and Yermack (1999) similarly find evidence that investors react less positively to independent director appointments when the director is busy.

Director incentives

While directors are tasked with monitoring an agent on behalf of the principal, they are also agents of the same principal. When director incentives are aligned with shareholder interests, boards will be more effective monitors (Fama 1980, Jensen and Meckling 1976). Board incentives are typically proxied by the nature of director compensation and directors' ownership of stock. Equity compensation should align director and shareholder interests (Elson 1995, Dalton et al. 2003). Yet according to Black and Bhagat (1999), most independent directors own trivial amount of stock and therefore have limited incentives to monitor carefully. Similarly, Morck et al. (1988) posit that without a personal financial interest in the firm (or control over a large block of votes) outside directors will be reluctant to second-guess poor managerial decisions. Fich and Shivdasani (2005) note, however, that incentive plans reduce risk diversification for outside directors since they are already invested in the firm in terms of the revenue stream from director's fees and the dependence of their reputational capital on the firm's success.

Empirical evidence on the relationship between director incentives and firm performance is inconclusive. Morck et al. (1988) find a significant but nonlinear association between the board's stock ownership and firm value (or between outside directors' stock ownership and firm value). McConnell and Servaes (1990) and Hermalin and Weisbach (1991) report similar results. The five percent and 25 percent ownership breakpoints reflecting nonlinearity used by Morck et al. have set the standard for later literature. Bhagat et al. (1999) find that outside director ownership, both in percentage of stock and dollar value terms, declines as firm size increases. This suggests that the largest firms, which tend to have the largest and most outsider-weighted boards, also have the weakest director incentives. Yet the same authors also find that director ownership correlates positively with disciplinary CEO turnover. Mehran (1995) finds no relationship between firm performance (in terms of Tobin's Q and return on assets) and outside directors' share ownership. As for the nature of director compensation, the few findings that exist are in conflict. Vafeas (1999) reports no link between adoption of incentive compensation and subsequent firm performance. However, Fich and Shivdasani (2005) find that firms using stock-option plans for independent directors have higher firm value and higher profitability, robust to self-selection and lagged-response tests. They further report positive investor reaction to incentive plan announcements.

Other board characteristics

Board characteristics are manifold. Research has yet to examine performance effects for some characteristics, such as sectoral expertise of directors. Other things being equal, one would expect directors who have managed other firms in the same business to be in a better position to monitor or

advise a CEO. Alternatively, such directors might be less inclined to question the conventions of that industry. At a broader level, a literature that tries to define, measure, or assess performance effects of *director quality* is nonexistent. Also, research has barely scratched the surface in terms of performance effects of other board characteristics such as level of board activity, structure of board committees, board interlocks, director age, director tenure, board diversity (minority and gender), executive experience, and CEO tenure.

Summary of literature on effects of board governance

For some board characteristics, empirical research more or less consistently suggests a certain performance effect. These include board size (smaller is better), classification status (not classified is better), multiple directorships (less busy directors are better).

For some other board dimensions, despite numerous attempts, the literature so far is inconclusive as to the presence or direction of an effect. These include board independence, CEO/chair duality, and director incentives.

Finally, for some other board characteristics, the literature is yet too thin to indicate any pattern. These include, but are not limited to, board activity, board committees, and interlocks, which I have not considered as covariates in my estimations.

One rather interesting outcome of the literature relates to the effects of board independence. Evidence from research on board governance and *critical firm decisions* tends to be consistent across different types of corporate actions. Independent directors appear to be effective in watching shareholder interests to the extent that they have a direct say in major corporate events. However, analyses of board governance and *firm performance* typically fail to find significant associations between board characteristics and performance. To the extent that relationships are detected, the sign of the relationship often negative. As Hermalin and Weisbach (2003) suggest, there are many factors affecting firm performance, and estimating the effect of governance on *isolated firm decisions* rather than on *performance* is more powerful because it is less prone to unobservables contaminating the statistical relationship.

The lack of consistent findings as regards the effect of board governance on firm performance in non-financial firms should not automatically mean that the same inconsistency would apply to financial firms. Moreover, the "industrial" or "manufacturing" label inevitably masks the inclusion of highly divergent

industries from consumer non-cyclicals such as food & beverage all the way to industrial commodities such as copper. It is possible that consistency, or findings that diverge from broad-based-sample findings, exist within individual sectors. However, it is impossible to capture such effects in industry cross-sections, especially given that firm fixed effects are underutilized in governance research, let alone industry fixed effects. Overwhelming reliance on cross-sections is at least in part to blame.

Other governance mechanisms and institutions

Corporate governance structures are the set of institutional arrangements that tend to align the interests of management and residual-risk-bearing shareholders (Williamson, 1984). As such, the board is not the only governance mechanism, though it is the only one *directly and solely* tasked with overseeing management on behalf of shareholders. The other mechanisms don't exist for governance purposes per se but work indirectly to align management and shareholder interests by encouraging management to deliver better results. Non-board governance institutions can be categorized into internal (incentives-based) and external (market-based) ones. Internal ones include executive incentives, concentrated ownership, and leverage. External ones comprise the takeover market, the product market, the market for managerial labor, and the capital market.

Executive incentives

Executive incentives can arise from two related yet different dimensions: compensation structure and share ownership. Executive compensation is typically structured as a mixture of a base salary, an annual bonus (which may be paid in part with cash and in part with company stock), long-term stock grants that vest over multiple years, and stock options. The base salary usually compensates the labor input of the CEO, and the variable components compensate the CEO for the fruits of her labor. All are typically benchmarked to similar firms. Incentive components of executive pay are, at least in theory, meant to align CEO interests with stockholder interests since they are linked somehow to the firm's performance[4]. Core et al. (1999) note that CEO pay involves a frequent and observable board decision and can be used as a metric for assessing governance effectiveness. Share ownership, the second major executive incentive type, can result from stock-based compensation as well as purchases of company stock by the CEO. At a broader level, stock ownership also means voting power. Thus a manager who controls a sizeable fraction of the firm's equity may have enough voting power, or influence more generally, to

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[4] However, my reading of numerous company disclosures also indicate that such links are almost never based on a formula and very rarely reflect the firm's performance relative to peers.

assure her continued employment (Morck et al. 1988). This has come to be known as the *entrenchment* hypothesis of executive ownership. Overall, the combination of incentive effects and entrenchment effects of executive ownership might imply a non-monotonic relationship between management ownership and firm performance.

Empirical evidence on the relationship between executive incentives and firm outcomes is fragmented and inconclusive. Morck et al. (1988) find a significant and nonlinear association between officer stock ownership and firm value. Firm value (as measured by Tobin's Q) rises with executive ownership in the 0-5 percent ownership range, declines in the 5-25 percent ownership range, and rises again above 25 percent. According to their interpretation, the initial rise may reflect incentives to maximize shareholder value, but beyond five percent, entrenchment effects dominate incentive effects. McConnell and Servaes (1990) and Hermalin and Weisbach (1991) report similar results. Mehran (1995) finds that the percentage of incentive compensation for CEOs declines with the percentage of stock held by the executive. Core et al. (1999) also find that total CEO compensation is a decreasing function of the CEO's ownership stake, implying that executives tend to balance compensation incentives and ownership interests. Holderness and Sheehan (1988) find that CEOs who own a majority stake receive larger salaries, but the increment is not economically important. He interprets this as evidence that boards consider CEO ownership when negotiating compensation contracts. Himmelberg et al. (1999) report that changes in managerial ownership seem to affect neither firm value nor accounting performance. Yermack (1996) finds that firm value is significantly higher when officers and directors have greater ownership, but due to his variable construction it is unclear whether this is an executive-ownership effect or director-ownership effect.

Concentrated ownership

Berle and Means' (1932) landmark work revolves around the dangers of diffuse corporate ownership. Many firms have grown to the extent that no person (legal or real) has sufficient wealth to own a controlling interest. Investors also prefer to limit their holdings in a given firm for risk-diversification reasons. As a result, the average shareholder's incentives to monitor management are curtailed significantly. She would bear the full cost of monitoring and receive only a small portion of any incremental benefit that would follow. Only those investors with a relatively large share ownership can be expected to engage in monitoring. Further, to the extent that large shareholders are professional investors, i.e., institutional investors, they are expected to be better monitors. Given that public firms are required to annually report stockholders owning five percent or more of stock, research has traditionally defined "blockholders" as such. However, Holderness (2003) notes that most research on ownership

concentration considers only the aggregate ownership of directors and officers, which actually is a measure of *insider* ownership rather than *concentrated* ownership *overall*. Also, studies rarely address ownership by outside blockholders who don't serve on the board.

Empirical evidence on the relationship between concentrated ownership and firm performance is too thin to indicate any direction. In an influential paper, Demsetz and Lehn (1985) fail to find a relationship between ownership by large shareholders and profitability. Barnhart and Rosenstein (1998), however, report a positive relation between institutional holdings and firm value. Shivdasani (1993) finds that dominance of board seats by affiliated blockholders decreases the probability of a hostile bid for the firm, whereas board seat holdings by independent blockholders increases it. Bertrand and Mullainathan (2001) report that the directorship of an outside blockholder is associated with higher stock-option exercise prices for CEOs (meaning lower cost to the firm). This implies a monitoring role for blockholders as well as a substitution between incentive pay and blockholder monitoring. Core et al. (1999) similarly find that CEO pay is lower in the presence of an external blockholder. Fich and Shivdasani (2005) find that firms with higher institutional ownership have higher likelihood of adopting incentive plans for independent directors. This is consistent with the idea that large shareholders advocate the adoption of such incentives to ameliorate agency problems.

Leverage

According to Jensen (1986), debt bonds the firm to make periodic payments and reduces the control managers have over the firm' cash flow and the incentive to engage in activities that don't create value. Grossman and Hart (1982) also argue that debt forces management to consume fewer perquisites and become more efficient. Leverage can also enhance or hinder a firm's ability to create value by constraints imposed by debt covenants (Faleye 2007). However, debt has both direct and indirect costs. Directly, use of more debt reduces cash flow available to shareholders. Indirectly, bankruptcy risk increases with level of debt. Despite all these theoretical arguments, it's hard to find a governance paper that examines debt as a key mechanism influencing firm performance. Empirical studies often do control for the firm's leverage in their specifications.

External institutions

It is easy to see economically why external institutions such as the takeover market or managerial labor market would serve governance functions. However, empirical assessment is rare, perhaps due to

difficulty or costliness of developing and implementing variables that will capture the nature of these markets. I follow the literature in acknowledging the importance of external mechanisms but not treating them in my estimations.

Governance research focusing on the finance industry

Research focusing on governance in financial firms and its effects makes up a small part of the governance-research universe (less than two dozen articles). What's more, none of these has examined governance structures or its links with corporate performance in the securities industry, which highlights one of the ways my work contributes to the literature. Some research does focus on mutual funds and closed-end funds, but these are not securities firms but investment instruments supplied and managed by securities firms (i.e., their products). The preponderance of studies examines commercial banks or bank holding companies, apparently due to convenience of sampling and data acquisition. Several *thousand* banks are publicly listed at any point in time, as opposed to only several *dozen* stand-alone securities firms.

Below I summarize financial-firm governance research in two areas: (1) governance structures, and (2) relationships between governance structures and firm responses. Devoting a full paragraph to each relevant study, this section is more detailed than my summary of general governance research because the dissertation focuses on financial firms.

Governance in financial firms

Handley-Schachler et al. (2007) tackle the question of why the governance of financial firms should merit special attention. They point out that governance codes and recommendations focus on a single agency (between shareholders and managers) and neglect other numerous agencies that exist in finance. As financial firms primarily function as managers of client assets, shareholdings should not be the primary source of agency in the industry. The main characteristic of agency is the management of one party's funds by another party, and such a relationship clearly exists between "contributors of funds" (i.e. clients) and the managers of funds. Handley-Schachler et al. note that the development of institutions based on principles of mutuality (e.g., credit unions) has occurred in the finance industry more than in any other, and attribute this nature to the ability of financials to obtain funds from clients (e.g., depositors) as well as shareholders. They provide a list of various agency relationships in finance that include the following principals: depositors, fund investors, pension-plan members, insurance-policy holders, and brokerage

clients. *Consequently, the distinctive characteristics of financial firms imply a need for distinctive corporate-governance arrangements.* However, Handley-Schachler et al. stop short of outlining how such distinction should be.

Macey and O'Hara (2003) provide similar arguments regarding the multiple-agency nature of financial firms, focusing on commercial banks. They recall the separation of ownership and control and the economic nature and purpose of fiduciary duties. Under Delaware law, directors owe fiduciary duties "to the corporation and its shareholders," including the duty of "care" and duty of "loyalty." In the context of banks, non-shareholder constituencies such as depositors might actually value a particular contractual right or protection more than shareholders value it. Moreover, claimants also include regulators, both as insurers of deposits and as *agents of other claimants*. The authors further note some "special problems" with banks. One such issue is that banks' capital structures typically contain 90 percent or more debt, at a much higher rate than manufacturing firms. Coupled with the presence of numerous depositors, this might create a collective-action problem regarding the monitoring of bank actions. Second, the presence of deposit insurance magnifies incentives for risk-taking on part of bank managers. FDIC insurance further weakens depositor incentives for controlling excessive risk-taking, whereas holders of uninsured debt would engage in better monitoring. This of course goes back to the governance-mechanism nature of leverage, summarized above in this chapter, which holds for any industry[5]. *The prescription of the authors, in the presence of multiple agency issues, is that the obligations of bank officers and directors be expanded to include fiduciary duties to fixed claimants.*

Adams and Mehran (2003) emphasize that governance-reform proposals that rely on studies of non-financial industry governance might be ineffective in addressing the problems of financial institutions. They make several arguments as to why governance may differ for bank holding companies and provide descriptive statistics that support their claim. In terms of reasons for different governance, they first note the presence of depositors and regulators with a "direct interest" in bank performance. However, they are not sure whether regulation would act as substitute or complement to board governance (Booth et al. (2002), summarized below, provide evidence supporting substitution). They also argue that the structure of executive compensation might be different for various reasons and note that the takeover market (as a governance mechanism) works differently for banks, involving very few hostile takeovers. As for

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[5] However, Macey and O'Hara seem to have missed the fact that unlike non-financial firms, banks do not obtain deposits to finance manufacturing or service provision; banking *is* the business of borrowing deposits and lending them out.

empirical analysis, the authors examine bank-holding-company (BHC) governance[6] along the dimensions of board structure, CEO incentives, and blockholders. Their sample includes 35 publicly-traded BHCs among the largest 200 BHCs from 1986 to 1996. They find that the average BHC board has 18.2 members as opposed to 12.1 for non-financials and includes 68.7 percent outside directors versus 60.6 percent in non-financials. Bigger boards imply weaker board governance. The relative magnitude of outside directorship has no clear implication since the authors do not differentiate between grey and independent outsiders. If outside members on bank boards tend to be grey directors at a higher rate than non-bank outside directors, then this would also imply weaker board governance. Further, they find that the proportion of stock options to other pay in CEO compensation and CEOs' stock ownership (percentage as well as dollar terms) are lower for BHCs (1.0 versus 1.6, 2.3 percent versus 2.9 percent, and $28 million versus $134 million, respectively). These also imply that executive incentives as a governance mechanism are weaker in case of BHCs relative to non-financials. Finally, blockholders own a smaller portion of BHC stock (42.2 versus 54.6 percent) compared with non-financial firm stock, which again implies weaker monitoring by institutional investors. *Adams and Mehran conclude that the "systematic differences" they find between banking and industrial governance support the argument that governance structures might be sector specific.*

Motivated by the almost exclusively friendly nature of takeovers in banking, Whidbee (1997) explores the interplay between board monitoring and ownership structure. His sample consists of 190 BHCs from Ferguson & Company's Bank Holding Companies database in 1990. Whidbee controls for the takeover market by constructing a state-level measure of takeover activity that equals average number of acquisitions per bank in the 1988-1990 period. As is customarily done, he differentiates between inside, affiliated, and independent directors (though he labels the latter as "outside"). Embracing more detail than most governance research as regards ownership structure, he also differentiates between ownership by the CEO, independent directors, institutional investors, independent blockholders, and affiliated blockholders. He runs (and estimates by OLS) regressions of independent director percentage as a function of ownership structure, CEO incentives (proxied by stock-option holdings), CEO power (proxied by duality and tenure), and typical firm-level covariates. He finds that independence level is higher when independent director ownership and institutional ownership are higher and when CEO ownership is lower (all sig. at 0.01). CEO/chair duality also depresses independence level (marginally significant) while CEO incentives and tenure don't. Economically, the effect is largest for CEO ownership, followed by independent director ownership. Recognizing potential endogeneity of ownership by CEO and

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[6] Typically, BHCs are publicly traded instead of banks themselves. For instance, Citigroup stock is traded on NYSE but not Citibank, Citigroup's key subsidiary.

independent directors, Whidbee instruments for these using all remaining (exogenous) variables. However, IV estimation produces qualitatively and quantitatively similar results. *The author concludes that board monitoring and active outside investor monitoring don't appear to be substitutes but work in unison instead.* In particular, high institutional ownership might force the firm to use more independent directors.

Booth et al. (2002) argue that regulation can act as a substitute for internal governance mechanisms and assess it empirically in the context of banks[7]. They point out that regulation limits the amount of managerial discretion since regulators monitor managerial decisions. To the extent that such monitoring reduces the impact of management on shareholder wealth, governance mechanisms may be *less essential* in controlling the shareholder-manager agency. Focusing on commercial banks, the authors mention regulation related to areas including but not limited to safety and soundness, fair lending, and depositor protection. Booth et al. also recognize share ownership by insiders as a governance mechanism in addition to board monitoring, and hypothesize that firms with heavy use of one mechanism will use lower levels of others (i.e., substitution). They analyze a sample of 100 largest banks and 100 largest non-financial and non-utility firms, obtained from Fortune rankings based on total assets in 1999. They find that officers and inside directors own an average of 5.8 percent of stock compared with 9.0 percent in industrial firms, that board size averages 16.4 in banks compared with 11.8 in industrials, and that 80 percent of bank CEOs are also chairmen compared with 70 percent in industrials (all sig. at 0.05). These would imply higher CEO dominance, inflated board size, and weaker insider incentives for banks. They also find that independent directorship averages 58 percent in banks compared with 51 percent in industrials (sig. at 0.05). This latter finding would imply stronger board monitoring, however, the authors raise the possibility that the incremental number of outside directors might be serving functions "other than monitoring" (e.g., political connections). The authors also run OLS regressions of the percentage of independent directors as a function of other mechanisms plus a wide range of firm-level covariates. They find a significant and negative relationship between insider ownership and independent directorship, but this relation is significantly less negative for banks. Running probit models of CEO/chair duality with similar specification, they find a significantly positive impact of bank status on such duality. *They conclude that the substitution between inside ownership and board monitoring is weaker and that CEO-chair separation is less important in banks relative to industrials, and attribute this to governance effects of regulation.*

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[7] As well as in the context of utilities, which I skip here for relevance reasons.

Booth et al. don't raise a fairly obvious but not innocent reason for bank boards carrying more outsiders. In the ordinary course of business, banks interact with a much larger number of firms than industrials do, extending loans and underwriting securities. If bank CEOs grant board seats to their favored counterparts in firms they do business with, then banks will have a higher number of outside, but not necessarily independent, directors. This would also explain the larger size of bank boards. Indeed, Adams and Mehran (2008) believe that lending relationships play "a particularly important role" in defining bank-board structure and note that bank directors often represent "some of the best [lending] customers of the bank" (Federal Reserve Bank of Atlanta, 2002). They acknowledge that the proportion of outside directors may overstate board independence if lending relationships exist but are not individually disclosed, as is the case in most proxy statements (my experience with dozens of BHC proxy statements confirms this). They also point out that lending is unique to banks. However, Adams and Mehran don't explore this venue empirically, given the absence of public data on lending[8].

Instead, they focus on another factors that should impinge on bank-board structure: organizational structure. Adams and Mehran note that unlike U.S. manufacturing firms, which typically organize along division or business lines that are not necessarily separate legal entities, BHCs have complicated organizational structures involving as subsidiaries banks, non-bank financial-services companies, and lower-level BHCs. To illustrate, the BHCs in their sample have on average 5.9 separately incorporated banking subsidiaries and 15 subsidiaries of any kind. The presence of numerous incorporated subsidiaries brings to existence numerous separate boards under the BHC umbrella, the effects of which on BHC board size are unclear. On the one hand, if subsidiary-level decisions are delegated to subsidiary boards, the BHC board may have a smaller agenda consisting of broad strategic issues, implying need for a smaller board. On the other hand, if the existence of subsidiaries creates need for having subsidiary-board representatives on the BHC board for better coordination, the BHC board will need to be larger. Regressing BHC board size on various measures of subsidiaries and BHC characteristics, the authors find that increased subsidiarization generally associates with a smaller board. *Thus, organizational complexity in banking seems to reduce, not increase, board size.*

Becher et al. (2005) exploit banking deregulation during the 1990s as a natural experiment and probe its effect on board governance. A series of new legislation from 1991 to 1996 made deposit insurance risk based[9], removed restrictions on interstate banking[10], and cut red tape in lending[11]. Banks started facing

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[8] Data on lending relationships are transparent to bank managers, boards, and regulators. Being a Fed economist, Mehran presumably has access to such data. It is curious that the authors offer no convincing explanation as to why they don't explore lending and bank directorship.
[9] Federal Deposit Insurance Corporation Improvement Act of 1991.

expanded opportunity sets, greater uncertainty, increased competition, and heightened corporate-control activity. The authors posit that, as an external shock, deregulation increases the sensitivity of firm value to managerial decision making, raising the need for effective board oversight. They also reference theory arguing that variable compensation pushes directors to better watch shareholder wealth and empirical research showing that deregulation increases sensitivity of executive pay to firm performance. Becher at al. focus on equity-based compensation (EBC) for directors, operationalized as the proportion of value of stock grants and options in total director compensation. Their sample covers 1992 to 1999 and includes longitudinal totals of 700 bank and 13,000 non-bank observations obtained from ExecuComp. They find that average director EBC in banks increased from 8.6 to 30.6 percent from early to late 1990s, with the bank/non-bank wedge hovering around 12 percent throughout (sig. at 0.01). Further, Becher et al. estimate a random-effects model of director EBC as a function of firm characteristics, separately for early 1990s, mid-1990s, and late 1990s. Interestingly, their specification does not include *any* board-structure variable. They find that, throughout, banks use significantly less director EBC compared with non-banks. The negative coefficient on the bank dummy actually grows over time. So, in a similar specification, they run regressions of within-period change in director EBC for the three periods, finding that bank status is negatively related to change in EBC in early period but not later. This suggests that by the end of the period banks catch up with non-banks in terms of director EBC *growth*[12]. Finally, Becher et al. raise the possibility that deregulation might change not only board incentives but also board structure. In longitudinal analysis, they find that both bank board size and fraction of independent directors were stable during the 1990s (at roughly 16 directors and 71 percent), but don't run an estimation. *In conclusion, the authors comment that banks have altered director incentives rather than board structure to deal with increased complexity due to deregulation.*

Mayers et al. (1997) exploit the variation in ownership structures in the insurance industry and investigate the role of outside directors in governance. Insurance firms can be stock companies where shareholding is open to anyone or mutual companies where ownership is restricted to policy holders (i.e., clients). Mutual ownership precludes the use of several governance mechanisms such as institutional ownership, stock-based executive compensation, and the takeover market, but it does permit the use of outside board members. The authors recall Williamson's (1983) position that board composition depends on the relative importance of alternative governance mechanisms, and argue that mutual insurance firms should have a higher percentage of outside directors than stock-based insurance companies to compensate for the

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[10] Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994.
[11] Economic Growth and Regulatory Paperwork Reduction Act of 1996.
[12] In other words, director EBC *acceletared* during the 1990s in banks compared with non-banks.

absence of other monitors. They use a sample of 120 mutual and 225 stock life-insurance companies obtained from Best's Insurance Reports in 1985. Running OLS regressions of the fraction of outside directors on a large number of governance and firm-level characteristics, they find that the average stock firm's board contains 48 percent outsiders compared with 64 percent in mutuals (sig. at 0.01). Further, they analyze board changes in 28 mutual-to-stock conversions and 50 stock-to-mutual conversions. Examining a six-year window around conversions, they find that mutualization is accompanied by an increase in outside directorship of 6 percentage points (sig. at 0.10) and demutualization is accompanied by a decrease in outside directorship of 10 percentage points (sig. at 0.05). In further analyses, they find that 51 percent of mutuals stipulate a majority of outside directors in their corporate bylaws as opposed to only 7 percent of stock firms (z=3.8).   Last but not least, they estimate operating expenses, proxying for potential sources of managerial perquisites, as a function of ownership type and a wide range of relevant controls. They find that mutuals with higher outside directorship have lower expenses on salaries, wages, and leases (sig. at 0.01*). Overall, Mayers et al. provide consistent evidence that board composition changes to compensate for lack of other governance mechanisms.*

Finally, in a discussion paper, Radin and Stevenson (2006) compare governance of corporations and mutual funds (MF). They note that the MF governance boils down to an interplay between two forces: fund management and independent directors. As with corporate boards, MF directors are subject to state-law fiduciary duties of care and loyalty to shareholders[13]. As a watchdog, independent directors practically act as a "separate board" on matters where management might have an opportunity to abuse the MF. A major tool MF boards wield in this regard is the authority to approve advisory, underwriting, and audit contracts and negotiate management and distribution (Rule 12b-1) fees. They can also recommend to fund shareholders, but *not necessarily* decide, that the investment advisor be terminated. While *the letter* of The Investment Company Act of 1940 seems to empower MF boards to dismiss managers, intricate details of the process of dismissal and replacement *in practice* require a two-thirds shareholder majority vote (even if the entire MF board votes for the change). This compares unfavorably with the clean-cut CEO hiring and firing power of corporate boards. In terms of board independence, stock exchanges mandate majority-independent boards for public companies but do not require independent board chairs. Radin and Stevenson recount recent SEC rule changes requiring 75 percent independence and an independent chair and mention MF industry resistance to these changes, but fail to report that these rules were returned to the SEC twice by a federal appeals court because SEC's proposals cold not furnish cost-benefit analysis supporting increased independence. Current requirements for MF

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[13] Note that MF "shareholders" are actually *clients* of the securities firm marketing and managing the MF. For instance, a Van Kampen funds shareholder is a customer of Morgan Stanley.

boards, as modified in 2001, include a minimum of 50 percent board independence only. In conclusion, the authors call on regulators to empower MF boards to terminate managers in circumstances of "clear and serious violation" of shareholder interests, to further enhance MF board independence, and devise oversight rules specifically designed for funds.

In summary, the literature on governance structures in financial firms asserts the presence of multiple agencies and emphasizes regulation's role. Both of these forces might call for different governance arrangements compared with non-financials. There is some empirical evidence, obtained from the banking sector, that the structure of financial-firm governance is different from that of industrial firms in terms of board size, board independence, CEO/chair duality, blockholder ownership, and executive and director ownership. The direction of these differences overwhelmingly points at weaker governance (e.g., lower executive ownership coupled with higher CEO/chair duality). In line with governance research in general, the existence of multiple governance mechanisms is probed, but findings are inconsistent. Empirical analyses have yet to cover securities firms.

Governance-outcome relationships in financial firms

Around the turn of the millenium, Tufano and Sevick (1997) remarked that there had been "virtually no research" on MF boards. They describe the legal and regulatory responsibilities of independent MF directors and focus on fund boards' direct decisions such as annual negotiations of management fees. Among other things, they note that MF directors typically sit on boards of several MFs of the same fund complex. Raising the issue of potential capture of independent directors by MF sponsors, they note that multiple directorships for the same sponsor might aggravate such potential. On the other hand, multiple MF directorship can create economies of scale and scope in oversight and help develop specialized monitoring skills. Turning to compensation, as a director's pay increases, she will be less likely be jeopardize it by challenging the fund sponsor (e.g., by insisting on a reduction in management fees). On the other hand, higher director's fees might indicate superior monitoring skills if the market for directors values such skills. The empirical analysis covers all MFs offered by the 50 largest fund complexes (by assets under management) as reported by Morningstar Sourcebook and Investment Dealer's Digest for 1992. One descriptive finding is that the average (median) director sits on 16 (nine) boards for the same fund sponsor. Also, no director oversees funds from more than one sponsor (contrary to usual practice in governance of public corporations). The authors obtain OLS estimates (with and without fund complex

fixed effects) of total fund expenses[14] as a function of board independence, board size, director compensation, director concentration in the complex, and fund-level and complex-level covariates that might affect fund expenses (e.g., fund's investment class and sponsor's sales force). They find that higher board independence and director concentration are associated with lower management fees (sig. at 0.01), suggesting that independence does matter and director oversight improves with multiple board seats. They also find that larger board size and higher director compensation are associated with higher management fees (also sig. at 0.01), the latter of which supports the sponsor-capture argument. Board size and independence effects lose significance in the FE models, however, suggesting that board composition matters within and not between complexes.

Khorana et al. (2007) study mutual-fund mergers in an effort to gauge the role and effectiveness of MF boards. Contrary to corporate mergers, the decision to merge funds does not necessarily require shareholder approval. Also, hostile takeovers don't exist in the MF industry. Thus, fund mergers reflect board decision making. The authors recall prior research showing that fund mergers are often the result of poor performance and inquire whether certain types of boards are more likely to approve mergers. Their sample covers 470 mergers from 1999 to 2001 obtained from CRSP Mutual Funds database and a control sample with no mergers from SEC filings. They find that directors of target funds, especially those involved in cross-complex mergers, lose board seats and suffer reduction in compensation. Given that mergers are costly to target directors, their decisions to merge seem to reflect behavior in the interests of shareholders, i.e., good governance. The authors further estimate a multinomial logistic regression where the outcome is cross-complex merger, in-complex merger, or no merger. They find a positive impact of independent director fraction on merger likelihood, independent of prior MF performance. Interacting prior performance and board independence, they also find that *entirely* independent boards (but *not* 75 percent independent boards) tolerate significantly less underperformance than the average board before approving a merger. Director compensation is also negatively related to merger probability. However, these results hold only for cross-family mergers, suggesting that in-family mergers occur due to reasons not related to performance, that boards don't play a well-defined a role in in-family mergers, or both. The authors find no significance for board size or independent chairs.

Del Guercio et al. (2003) extend Tufano and Sevick's (1997) mutual funds analysis to the context of closed-end investment companies. Mutual funds can only be sold back, or "redeemed," to the sponsor; there's no market for MF shares. Closed-end funds, however, are more interesting for governance research because their shares are traded on stock exchanges. Thus they are a hybrid between mutual

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[14] Including management fees, distribution fees, and other expenses such as registration and audit.

funds and corporations. This brings to life governance mechanisms such as blockholder monitoring that simply don't exist for mutual funds[15]. Also, closed-end fund directors have discretion over a wider range of actions such as debt issues, capital increases, and restructurings that MF boards are not involved with. Following Tufano and Sevick, the authors examine fund expenses as an outcome that should reflect board effectiveness. Their sample includes 476 closed-end funds belonging to 101 complexes as of 1995 obtained from CDA Wiesenberger's Investment Companies Yearbook. They estimate OLS (separately for individual funds and by-complex averages) and fund-complex-FE regressions of fund expenses as a function of board structure, director compensation and tenure, insider and blockholder ownership, and fund and complex-level covariates. They find that independent director fraction is negatively related to expenses in both OLS and FE estimations (sig. at 0.001). The effect of board size or insider and blockholder ownership on expenses is not clear (sensitive to specification). Classification status of the board is clearly not significant. However, director's fees are significantly associated with higher expenses in both fund-level and complex-average estimations. *Del Guercio et al. conclude that "nominal" board independence improves board effectiveness but high cash compensation undermines director incentives to pursue shareholder interests.*

Boo and Sharma (2008) investigate links between governance structures and the audit process in BHCs. According to the "risk-based perspective" of audit, auditors adjust their procedures in response to perceived client risk. According to the demand-based perspective, audit committee members demand auditor assurance to protect their own reputation and avoid litigation. The authors point out that prior audit-fee studies have excluded financial firms due to their "uniqueness and complexities." *Presence of regulation might reduce risk and information asymmetry in BHCs compared with other sectors, thus diminishing the need for monitoring by the board.* Boo and Sharma also argue that independent BHC directors would have greater incentives to protect their reputation compared with their counterparts in non-regulated entities, but fail to provide the reasoning behind. They further posit the level of audit fees as a measure of the audit process, apparently in tune with prior literature. Their sample includes 357 BHCs with assets over $200 million in 2001 obtained from FDIC listings. They report OLS estimates of audit fees (logged) as a function of board characteristics, ownership structure, and firm-level covariates. Out of eleven non-governance variables, ten are significant and in the expected direction given prior audit research. However, out of nine governance variables, only one is significant (at 0.05). The dummy for audit-committee independence exhibits a negative association with audit fees, but the economic significance is small. *In conclusion, Boo & Sharma attribute these findings to a substitution of regulatory*

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[15] But stock-option compensation is prohibited for mutual as well as closed-end funds.

oversight for board monitoring. To the extent that regulatory monitoring reduces audit risk, boards will require less extensive audits.

In summary, the stream of literature focusing on the relationship between governance and major firm decisions is narrow, confined to the funds subsector of the finance industry. Nonetheless, consistent evidence suggests that board independence makes a difference when it comes to actions in shareholder interest, such as lowering fund expenses and approving mergers that reverse poor performance. This is in line with findings from governance research in general. However, the strength of independent directors in the fund sector seems to be weakened by being paid for sitting on multiple boards for the same fund complex. Findings on other board characteristics are either mixed or don't exist.

Governance-firm performance relationships in financial firms

Golec (1988) looks at executive incentives and mutual fund performance. Compensation contracts for investment managers commonly include a base fee portion (like the base salary of a CEO) and an incentive fee portion (like the annual bonus of a CEO). The base fee is a percentage of assets under management, and the incentive fee is a different percentage of the incremental return over a benchmark index. The incremental return reflects the manager's value added. Golec exploits the variation in MF fee structures, namely the fact that not all funds use incentive fees. He measures fund performance by alpha, which is the excess return on the fund over and beyond what is explained by market return and the fund's risk level. His sample observes monthly returns of 387 MFs from 1982 through 1987. Golec finds that MFs using incentive fees produce average alpha of -2.1 whereas matched non-incentive funds produce average alpha of -3.7 (t=2.4)[16]. While he does account for portfolio risk by matching controls on risk basis, he does not run a multivariate model. Thus he fails to control for other potentially important inputs to performance such as MF size, MF complex size, asset class, etc. We should also note that this study tries to assess the impact of one single governance mechanism in isolation. *The author concludes that incentive fees "appear to improve" the performance of fund managers.*

Fast-forwarding to the new millennium, we find Varma (2003) probing the relationship between board oversight and performance in closed-end funds (CEF). As mentioned above, CEFs are publicly traded, so their shares are priced by the market. They are also required to report their net asset values on weekly basis. The difference between the CEF's net asset value (NAV) and market capitalization is an indicator

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[16] A well-established fact in finance is that the average asset manager fails to beat simple market indices; hence the study finds negative alpha for both incentive and non-incentive compensation modes.

of the fund's valuation by the market, very similar to the Tobin's Q proxy of corporate performance that compares market valuation with book value of assets. If the fund's market capitalization exceeds (falls below) its NAV, the difference is called a premium (discount). Varma's sample contains 439 closed-end funds in 1996 obtained from Morningstar Principia. He runs an OLS regression of fund premium as a function of board characteristics, director compensation, ownership structure, and fund-level covariates (e.g., size, fund type). Percentage of independent directors, board size, director ownership, and last but not least, median director compensation per complex turn out to be insignificant. The presence of an independent nominating committee has positive association with fund premium (sig. at 0.01), however. Surprisingly, the presence of a blockholder is associated with a reduction in fund premium (sig. at 0.01). *The author concludes that an independent nominating process is positively priced by the market since investors interpret this as a signal that directors are not "hand-picked."* Varma also remarks that board oversight in investment management has received little academic attention since MFs, unlike public firms, are not required to disclose board characteristics.

Del Guercio et al. (2003), in part summarized above in the governance-and-outcome-research subsection, also look at the relationship of governance with closed-end fund premiums. To reiterate, their sample includes 476 CEFs belonging to 101 complexes as of 1995. In a more detailed effort than Varma's, they run OLS regressions (separately for individual funds and by-complex averages; with and without fund complex fixed effects) of CEF premium as a function of board structure, director compensation and tenure, insider and blockholder ownership, and fund and complex-level covariates. They find no significance on the proportion of independent directors, director compensation, or insider and outside blockholder ownership. Board size has a negative association with fund premium in both regressions (sig. at 0.001 and 0.05). Surprisingly, board classification relates positively to fund premium in all three specifications (sig. at 0.01, 0.05, 0.10). *The authors conclude that evidence regarding board impact on performance is weak and opposite in sign to expectations.*

Subrahmanyam et al. (1997) explore the impact of board composition on the performance of commercial banks engaging in takeover activity. They summarize prior arguments for a lesser role for boards in banking compared with industrial, non-regulated sectors. They also note that banking and antitrust laws limit the pool of qualified outside directors for banks. Their sample includes 225 takeover announcements worth more than $100 million occurring from 1982 to 1989 obtained from Mergerstat Review and a Lehman Brothers study. They estimate cumulative abnormal return (CAR) on the bidding bank's stock over two-day announcement period as a function of board characteristics, ownership structure, and bank-level and deal-level covariates using OLS. They find that independent director

ownership and external directorships of independent directors have a positive association with CAR (sig. at 0.05). However, they also find a negative coefficient on the percentage of independent directors (sig. at 0.05). Board size and insider ownership (as well as its squared term, informed by non-linearity established in broader governance research) don't seem to matter. *Combined, these findings would suggest that it's what independent directors have at stake that matters, and not necessarily their proportion on the board* (but the authors don't raise this obvious implication). Subrahmanyam et al. conclude that the presence of independent directors by itself does not ensure that acquisitions in interest of shareholders are executed.

Sierra et al. (2006) explore the impact of governance mechanisms on the accounting performance of bank-holding companies. In addition to the board, they also consider external monitoring by regulators and debtholders. *They remark that the dispersed and unsophisticated nature of depositors brings about a collective action problem in monitoring management (note that a similar argument for shareholder-manager agency is a classic). In addition, the claims of most depositors are also covered by deposit insurance. Therefore, the regulator serves as the delegated monitor for depositors.* To proxy for debtholder monitoring, the authors use the ratio of uninsured borrowing to assets. To proxy for regulator monitoring, they use Fed's confidential composite "BOPEC" rating for bank holding companies[17]. Further, using seven different board characteristics, they create a composite measure of "board strength" with integer values of one, two, or three (whereby they actually jettison a lot of underlying variation). Finally, they use return on assets as performance measure[18]. The sample observes 76 BHCs, obtained from ExecuComp, during 1992-1997. The authors recognize "board strength", executive pay, and firm performance as endogenous variables and run a 3SLS system of simultaneous equations with a range of bank-level explanatory variables (the instruments are leading response variables). However, they also run a simpler, firm and year fixed-effects model and report that it yields quantitatively and qualitatively similar results. The findings include a positive link between "board strength" and ROA as well as between executive pay and ROA (both sig. at 0.01). However, due to the doubtful construction and vague meaning[19] of their "board-strength" variable, this finding says little about board governance.

Becher et al. (2005), in part summarized above in governance-structures-research subsection, also examine the relationship between director incentives and bank performance, using both ROA and ROE as

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[17] BOPEC assesses various dimensions of a bank's financial condition and is by itself not indicative of the amount or nature of Fed's monitoring, however.

[18] They shun stock-price-based measures on grounds that prices are "very noisy" signals and are subject to market-wide fluctuations not controllable by manager. I find this rationale unpersuasive.

[19] A "board strength" of three or two provides little guidance to firm decision makers and policy makers on how to ensure "board strength" worth three or two.

performance indicators. They measure director incentives by the fraction of equity-based compensation (EBC). For this analysis, they use a cross-section of 49 banks for which data are available from 1992 through 1999. They split the sample into below-median director EBC and above-median director EBC subsets. They find that the average high-EBC bank outperforms the average low-EBC bank both in terms of ROA and ROE: 1.43 percent versus 1.15 percent in case of ROA and 16.9 percent versus 14.5 percent in case of ROE (both sig. at 0.01). Thus, enhanced director incentives seem to be associated with higher performance; however, the authors don't report a multivariate analysis.

Mishra and Nielsen (2000) also use accounting-performance measures, but concentrate on board independence and CEO incentives as determinants of performance. They choose to focus on a single sector in order to avoid cross-industry variation in determinants of firm performance such as competitive intensity, regulatory supervision, and "level of agency conflict." They don't have any argument that relates to the finance sector in particular, other than an assessment that bank boards took more active roles in the 1980s and 1990s due to legislative and economic changes. Their sample comprises 67 of the 100 largest BHCs as of 1990. To proxy for executive incentives, they use the sensitivity of CEO pay to firm performance (dollar change in total CEO pay per $1000 change in shareholder wealth). The authors estimate OLS regressions with ROA as a function of board independence, CEO pay-performance sensitivity, ownership structure, CEO duality, interactions between independence and CEO variables, and firm characteristics.. They find that performance associates positively with fraction of independent directors and pay-performance sensitivity (sig. at 0.10). Higher independent-director ownership also implies higher ROA. Mishra and Nielsen also report that using ROE as performance indicator yields similar results. Finally, to address potential endogeneity, they estimate a simultaneous-equation system of performance, board independence, and CEO incentives. The results of this model suggest a lack of significant effects of independence or CEO incentives on bank performance.

Adams and Mehran (2008), in part summarized above in governance-structures-research subsection, also examine the relationship between bank governance and performance, using both ROA and Tobin's Q as measures of performance. Their sample includes 35 BHCs observed from 1986 to 1999, randomly selected from the top 200 BHCs. They first run firm and year fixed-effects models of Q as a function of board structure, director compensation, executive ownership, and a set of bank-level controls. The use of bank-fixed effects limits omitted variable bias. The results don't indicate significant effects for board size, fraction of outside directors, or non-CEO chair. They find statistically significant but economically unimportant negative effects for external directorships and CEO ownership. They do find a statistically as well as economically significant *negative* effect for whether directors are incentivized via payment in

deferred stock. As regards the surprising findings that CEO ownership and director incentivization associate *negatively* with performance, the authors are silent on the latter but attribute the former to within-firm variation in CEO ownership in their long panel (which cannot be captured in prior governance studies using cross-sectional samples). As for ROA estimation using FE, Adams and Mehran fail to find significance on board size and board independence. Here the specification omits all other governance variables, although it includes proxies for M&A activity and complexity. *The authors conclude that there appears to be no relation between bank performance and board composition or size.*

Boubakri et al. (2008) assess how board governance and other mechanisms influence the long-run stock performance of insurance-firm combinations. They define performance in terms of three-year S&P-500-adjusted buy-and-hold return on the acquiring insurer's stock. Their sample includes 177 transactions in property-liability insurance during 1995-2000 obtained from SDC by Thomson Financial. They regress return on board structure, ownership structure, CEO tenure, and deal characteristics using OLS. Interestingly, the authors provide descriptive statistics on board size but don't use it in their specifications. The *findings include negative coefficients on percentage of independent directors (sig. at 0.01), blockholder ownership (sig. at 0.05), CEO ownership (sig. at 0.01), and CEO/chair duality (sig. at 0.05).* The board-independence finding is in line with Subrahmanyam et al.'s (1997) for banks. The authors interpret negative association of CEO ownership with performance as an indication of CEO entrenchment[20]. They also note the possibility that blockholder and CEO ownership might be endogenous to post-M&A performance (if blockholders and CEOs can anticipate poor performance, they would reduce their ownership stakes prior to the deal). Thus they instrument for these two ownership variables using CEO age and tenure[21]. The IV estimation does not change the sign or significance of ownership findings, however.

Barrese et al. (2007) also analyze the relationship between board governance, ownership concentration, and firm performance in the insurance industry. They measure firm performance in terms of Tobin's Q, the most common such measure in governance research. Their sample includes 38 casualty insurers, obtained from SEC's EDGAR database, observed from 2000 to 2005. They estimate a firm-and-year FE model of performance as a function of outside director percentage, officer and director ownership, and firm characteristics. They find a positive association between outside director percentage and performance (sig. at 0.05) which, however, disappears when officer and director ownership are included

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[20] I would also add that CEOs with higher ownership stakes might be more effective in crafting empire-building mergers that don't necessarily create value.
[21] Why CEO age and tenure would be an appropriate instrument for blockholder ownership is unclear.

in the specification (the latter variable is not significant either). Like Boubakri et al., Barrese et al. ignore board size in their estimation. When concluding, the authors partly qualify their findings in that they apply only to stock insurance firms and not necessarily to mutuals.

In summary, the stream of literature assessing the relationship between governance and firm performance is more extensive than that probing governance - major decision relationships. So far it has focused on commercial banking with some exploration of funds and insurers. Level of board independence is found to be either negatively related with performance or insignificant. Board size, officer ownership, and blockholdings, to the extent that they are used as explanatory variables, exhibit a similar pattern. Findings on other board or governance variables are too few to provide any guidance.

Summary of research on board governance in financial firms

Researchers have argued that financial-firm governance should differ from that of industrial firms due to presence of multiple agencies and close regulation. Evidence obtained from commercial banking suggests that board governance in banks is weaker compared with industrial firms. Consistent findings also indicate the coexistence of multiple governance mechanisms and, in part, substitution among them. If such substitution is extended to include regulation, regulators might indeed have acquired a de-facto governance mission that reduces the role of the board. Empirical analyses covering mutual and closed-end funds consistently suggest that more independent boards result in firm actions that are in the interest of shareholders. However, when it comes to eventual shareholder value creation, in the context of funds, commercial banking, and insurance, board independence does not seem to matter (nor does board size). Potential firm-performance effects of other board characteristics are either similarly inconsistent or have not been probed.

Overall, literature on financial-firm governance is still in its infancy compared with governance research in general, and has concentrated on commercial banking and funds. Mutual and closed-end funds are actually investment instruments (products) offered by securities firms (brokerage and asset-management firms). Securities firms themselves are governed at a different level; therefore, findings from fund-governance research are clearly not applicable to securities firms. So far, no empirical analysis has covered brokerage or asset-management firms.

CHAPTER 3:   THE FINANCIAL FIRM AS DUAL AGENCY

*"...[B]eing the managers rather of other people's money than of their own, it cannot
be well expected, that they should watch over it with the same anxious vigilance with
which the partners in a private copartnery frequently watch their own."*
           Adam Smith, The Wealth of Nations, 1776

Jensen and Meckling start their landmark 1976 paper on economic agency and the theory of the firm with
the above quote. While this chapter does not nearly purport to make a similar contribution, it benefits
from repeating the same. This is a chapter about financial firms, and financial firms are in the business of
managing "other people's money."

Financial institutions are the centerpiece of financial markets: they fulfill the intermediary function
between suppliers and demanders of funds, and they fulfill a fiduciary function in the management of the
wealth of individuals and businesses. They transact with all economic actors in debt and equity markets
in commercial banking, investment banking, and asset-management relationships of bilateral or
multilateral nature.

The role financial institutions play in markets has also grown over time. The proportion of equity
investments made *directly* by households has shrunk from 90% to 39% of total equities outstanding from
1950 to 2000. Over the same period, fiduciary-type management of investor funds (mutual funds, private
pension funds, and state & local pension funds) has captured an ever-increasing share from 3% to 42%
(Allen 2001). This study's starting point is a theory of how financial firms operate and are managed that
emphasizes fundamental differences from non-financial firms.

This chapter is structured as follows. First, I present two major differences that set financial firms apart, namely, having clients as principals and being subject to extensive regulation. Then I introduce a simple model of managerial behavior that features these major differences and allows for managerial shirking and malfeasance. Finally, I discuss governance implications of the models' features and predictions.

Major differences between financial firms and non-financials

In this section, I discuss some important differences between financial and non-financial firms. The discussion centers on the institutional setting, with economic analysis following in subsequent sections.

<u>Clients as principals</u>

Financial institutions are trusted with the money of their clients, creating an additional agency problem between *clients* and financial-firm management, in addition to that between *stockholders* of the firm and its management (the standard agency problem). This additional agency problem exists in pure form in financial institutions only – only such firms have strict fiduciary responsibilities to their clients.

Here, the umbrella term "financial firm" does comprise firms of different kinds operating in different sub-sectors of the vast finance industry. Yet it is the basic relationship between the client and the firm, the basic duty of the manager to the client that matters, and that relationship is essentially equivalent across sub-sectors within the broader industry. The following few paragraphs discuss how this relationship is characteristic of all sub-sectors (Table 3.1 provides a summary).

Table 3.1 – Client agency in subsectors of finance

Subsector	Item subject to client agency
Investment advisors	Assets under management
Brokerage	Assets under custody; trade execution
Commercial banking	Deposits
Investment banking	Value of securities to be issued
Insurance	Policy premiums

In the case of asset-management firms ("investment advisors" in regulatory terms), as the label attached to these firms by the market suggests, the firm is tasked directly and purely with managing client assets held under custody. Clients may task the firm with various investment objectives ranging from preservation of capital all the way to maximum return. However, regardless of the risk/return profile of the client, the firm's job is managing client money.

In the case of brokerage firms, the firm is tasked with executing client orders for trading securities, and it is supposed to provide the best execution for a given order, while client assets are also held under custody (trusted to the firm). Furthermore, a standard part of a broker's job is to occasionally provide the client with investment recommendations (so-called "stock tips") which often result in trades. Whether client assets are managed on a "discretionary" basis (typical with investment-advisory accounts) or on a "non-discretionary" basis (typical with brokerage accounts) does not really matter. Either way, security selection and trade execution depend on the agent's information and effort.

In the case of commercial banks, the firm is trusted with the deposits of customers, and is tasked with ensuring that the deposited amount plus a positive interest is returned upon demand or expiration of the deposit's term.

In the case of investment banks, the firm is tasked with raising the highest possible amount of money that the market will allow for the client's securities. Recognizing that those securities have some intrinsic value even without the analytical and marketing efforts of an underwriter, the bank's mission can be framed as adding the highest value possible to the client's capital.

In the case of insurance firms, the firm is trusted with the client's premium, and is tasked with returning to the client an amount strictly higher than the premium when certain events (such as retirement or an accident) occur, which can only be fulfilled if the deposited premium is managed prudently.

In sum, the basic nature of a financial firm, be it a bank, a brokerage, or an insurer, involves receiving funds from clients, using the funds prudently, and ensuring a positive return on them. This is essentially equivalent and economically very similar to the relationship between firm shareholders and firm managers (shareholders invest money in a firm and managers manage it).

It might seem that a similar relationship between clients and managers exists in some other industries, such as health care or legal services, rendering the financial industry not unique in this regard. Perhaps

the best way of comparing industries in terms of client-manager agency is not to argue that certain are "white" and others are "black", but to place them on a spectrum of client agency.

Manufacturing firms are at or near the origin with zero or no agency. Their business consists of producing and selling a tangible good to the consumer, trying to maximize producer surplus and minimize consumer surplus. Financial firms are at the high end with complete (or almost complete) agency, akin to that between managers and shareholders. Other services industries, such as health care, legal, or leisure, scatter to different locations along the spectrum depending on the exact nature of the task and responsibilities of the manager. While St John's Hospital with its healing powers would certainly place higher than Pepsi that just quenches thirst, it also would place lower than Vanguard. Sullivan & Cromwell would place higher than Marriott, but it would place lower than Goldman Sachs. Procter & Gamble or Apple would be at the bottom of the scale.

What really matters is not to what extent a client-manager agency is present in various business lines. What is important is that this agency does exist in financial firms, and it matters to accurately describing the industry because the business consists of managing client money. Following the identification of the shareholder-manager agency problem (Ross 1973, Jensen & Meckling 1976), the agency nature of the investor - investment advisor relationship was recognized (Starks 1987) and was demonstrated empirically[22] (Golec 1992) relatively quickly. Meanwhile, as mentioned above, fiduciary-type management of funds has become the largest force on the demand side of capital markets.

Moreover, at the individual-firm level, this additional agency problem might matter more than the standard agency problem, as proxied by the size of the value of *client assets* under management relative to value of *stockholder assets* under management. Granted, if it is easier for management to churn away shareholder assets than to waste client assets, then there might be more at stake for stockholders than there is for clients. However, client assets are typically an order of magnitude larger than stockholder assets. For instance, at the end of 2006 Merrill Lynch managed $540 billion of client assets – a measure of fiduciary responsibility to its clients – and its market capitalization was $77 billion – a measure of fiduciary responsibility to its own stockholders. In other words, Merrill clients had trusted the firm with seven times more money as its stockholders. Similarly, Goldman Sachs, another investments giant, managed $532 billion of client assets, and its market capitalization was $80 billion. This list, if expanded to all financial services firms, would reflect the same phenomenon: financial firms embody two fiduciary

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[22] He finds that basis fee and incentive fee parameters for mutual funds are significantly related to the fund's asset size and a proxy for the information level of the advisor.

relationships, and the amount of money trusted to managers within the additional relationship is much larger than that trusted to managers within the standard principal-agent relationship.

While the sub-sector discussion above takes the financial firm as a "pure-play" organization focusing on a single line of business, financial firms mostly operate multiple lines of business under a single roof, such as asset management and brokerage. This does not weaken the fiduciary nature of the relationship between the manager and the client; to the contrary, it bestows the manager with multiple responsibilities to the same client. In the analysis to follow, I use the pure-play asset-management firm for modeling purposes[23].

Regulatory oversight

Regulation matters because it modifies the behavior of managers and therefore has implications for corporate governance. The norm for the financial industry is to be regulated, by dedicated federal and/or state-level agencies for each sub-sector, sometimes complemented by self-regulatory organizations.

Most financial-services firms[24] are regulated and monitored by dedicated regulators on an on-going basis. Commercial banks and their holding companies are subject to regulation and examination by the Federal Reserve System (Fed). Nationally chartered banks are supervised by the Office of the Comptroller of the Currency (OCC). State-chartered ones are supervised by departments of state governments as well as the Federal Deposit Insurance Corporation (FDIC). Federal savings & loan institutions are monitored by the Office of Thrift Supervision (OTS). Insurance firms and their holding companies are subject to regulation by state-level authorities. Broker-dealer firms, investment-adviser firms, and investment banks are regulated as well as monitored by the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC). State-level securities regulators also exist and complement SEC's work. Self-regulatory organizations including Financial Industry Regulatory Authority (FINRA, formerly National Association of Securities Dealers and New York Stock Exhange Regulation separately), National Futures Association (NFA) also impinge on financial firm behavior. In mortgage finance, the government not only regulates but also controls the largest players (Fannie Mae and Freddie Mac). The Frank-Dodd Act of 2010, passed in response to the recent financial crisis, further consolidated the role of regulation in finance and added another explicit layer for consumer protection.

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[23] The principal modeling logic could be applied to different lines of financial services with simple adaptations.
[24] Exceptions include private equity firms (where venture capital is a special case) and hedge funds.

In general, regulation tends to define caps and floors for managerial behavior, restricting the universe of choices in ways believed to be in the interest of various stakeholders. In commercial banking, regulations focus on risk taking, and the primary concern is to keep each institution afloat so as to protect deposits at firm level and to ensure the stability of the national financial system. In brokerage and asset management, regulations focus on disclosure, where the primary concern is to make sure investors are aware of the nature of choices offered and their potential consequences. While disclosure regulation may not seem to directly shape managerial behavior in the securities industry, it indirectly does so. With appropriate disclosure, investors cannot be herded into obviously bad investments.

It is not uncommon for governance researchers to omit regulated industries (typically utilities and financial sectors) from analysis, usually offering no other justification than these industries' being regulated (e.g., Cheng 2008). Yermack (1996) is a rare exception, supporting his omission by "concerns that government regulation leads to *different, more limited roles*" for boards (emphasis added). This chapter recognizes the presence of regulation as a major component of the financial firm's difference from the non-financial that might affect managerial behavior, and explicitly incorporates it into models. This might also serve to provide some analytical ground for the "concerns" Yermack mentions.

Analysis to follow

Despite all of the above, the way financial institutions operate has played little role in financial theory (Allen 2001), and hence, in empirical research. For instance, in the standard asset-pricing paradigm, investors are assumed to invest their wealth directly in portfolios of securities, *assuming away financial intermediaries and all potential agency problems*. In a rare exception, Cornell and Roll (2005) extend asset-pricing theory to delegated investing.

On the one hand, the burgeoning corporate-governance literature has paid attention to how effectively governance mechanisms address the agency problem between shareholders and managers (with empirical findings varying highly across dimensions of governance[25]), but not in the dual-agency context of a financial firm. About a dozen studies have examined governance structures in insurance (e.g., Mayers et al, 1997), banking (e.g., Booth et al, 2002), mutual funds (e.g., Khorana et al, 2007), and financial-services firms in general (e.g., Schnake et al., 2005). While these studies make important contributions toward generating a literature in financial-firm governance, none recognizes the financial firm as a dual

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[25] These findings are summarized in the literature review and data chapters.

agency. Also, to the best of my knowledge, no study has been published on the governance of securities firms *themselves* (as opposed to mutual funds they manage).

On the other hand, research has elaborated on how contracts should be structured to best align investment-advisor interests with client interests (Stracca 2006 provides a good review), but in complete isolation of the standard agency problem that involves the same manager. No research so far has probed how the standard agency and the additional agency might interact with one another. The first literature (governance) by and large ignores the distinctive nature of the financial firm, and the latter (advisory contracts) provides only a partial picture of the financial-services firm.

In recent years, probably at least partially motivated by a series of early-2000s "scandals" in the finance industry (IPO allocations, research-analyst conflicts of interest, and mutual-fund trading), there are signs of researchers and selected segments of the finance industry paying fresh attention to the agency inherent in financial firms. A report by the Bank for International Settlements (2003) bluntly observes that "at the core of the asset management industry is a separation between ownership and control of financial wealth" and goes on to detail how the nature of the agency varies across different types of asset-management arrangements. Mehran and Stulz (2007) review the literature on the economics of conflicts of interest in various settings of the finance industry. More recently, research in the aftermath of the 2008 crisis has focused on securitization, systemic risk, and too-big-to-fail issues. *However, none of these studies and reports attempts to inquire into the implications of financial-firm managers having both stockholders and clients as principals.*

The rest of this chapter focuses on and tries to formally capture the implications of two important dimensions of the financial industry: dual agency and regulation.

The financial firm as dual agency

In this section, I first lay out simple visual descriptions of how financial and non-financial firms operate. Then I present four models of managerial behavior under moral hazard to formalize the analysis. Moral hazard revolves around the issue that the agent's effort level cannot be observed by the principal (i.e., hidden action). I cover the two major problems a principal faces: motivating an agent to work hard (potential shirking problem), and motivating an agent to work honestly (potential malfeasance problem). For each type of moral hazard, first the non-financial firm is analyzed (the baseline case), and then the

analysis is extended to the financial firm. Throughout, principals are referred to in the feminine and agents in the masculine for convenience.

Financial versus non-financial firms: Visual description

The figures below are intended to convey the essential differences between financial and non-financial firms as concerns principal-agent relationships and production technologies.

Figure 3.1 depicts the operation of a non-financial firm. The firm's stockholders (principals) have hired a manager (agent) to manage their capital for maximum shareholder value. The business consists of the production and sale of goods/services. The manager purchases raw materials from suppliers, turns them into finished goods, and distributes them to consumers[26]. As a result, the manager creates an output for the stockholder (a profit equal to the margin between revenues and costs, and stock-market valuation driven by current and expected future profits). He gets paid according to the contract between himself and stockholders, which usually has a fixed salary portion for insurance and a variable incentive portion that depends on the firm's output.

Figure 3.1 – The non-financial firm
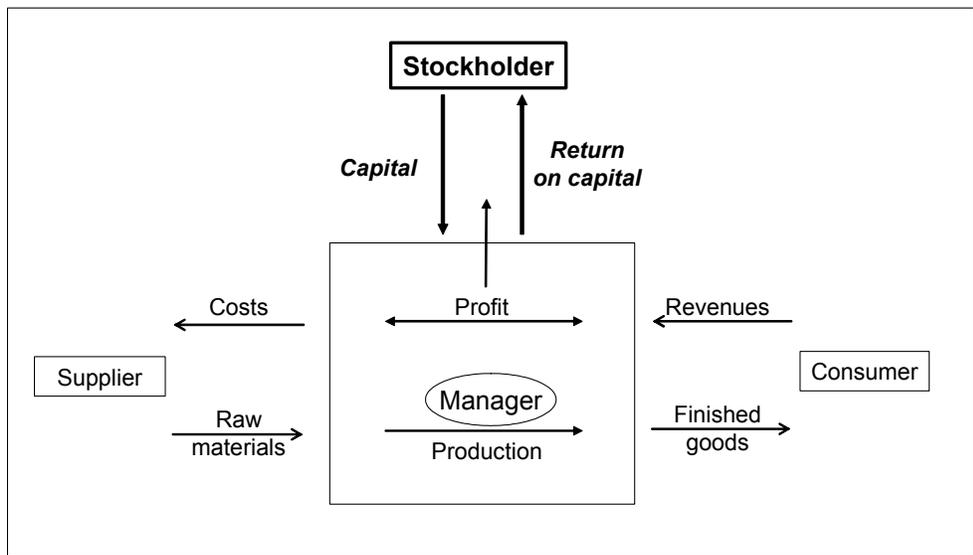
Note that the manager is a fiduciary of stockholders only. In addition to shareholders, he does interact with suppliers and customers in the regular course of business, but he is not tasked with maximizing the

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[26] In the principal-agent literature, all employees of the firm are typically collapsed into a single manager producing the output (e.g., see Holmstrom and Milgrom 1991).

welfare of suppliers, customers, or any other party other than shareholders. In fact, the very fiduciary duty to stockholders *requires* that the manager seek to minimize costs (thereby reducing the welfare of suppliers) and maximize revenues (thereby reducing the welfare of customers)[27]. To iterate, the manager is an agent of shareholders only.

Figure 3.2 depicts the operation of a financial firm, using the case of an asset-management firm (the figure and the analytical model to follow could be adapted to other types with minor modifications). As with the non-financial firm, the stockholders of the financial firm (principals) hire a manager (agent) to manage their capital with the intended goal of maximizing shareholder value. However, with the financial firm, *the business itself* consists of the management of client assets for maximum return. The client enters an agreement with the firm/manager for the management of her funds according to her risk/return profile[28]. The client turns over funds to the firm at the beginning of the period. During the period, the manager invests client funds in a set of investment instruments, thereby producing a return on the funds. At the end of the period, client assets have grown by the return on the funds generated by the manager.

Figure 3.2 – The financial firm
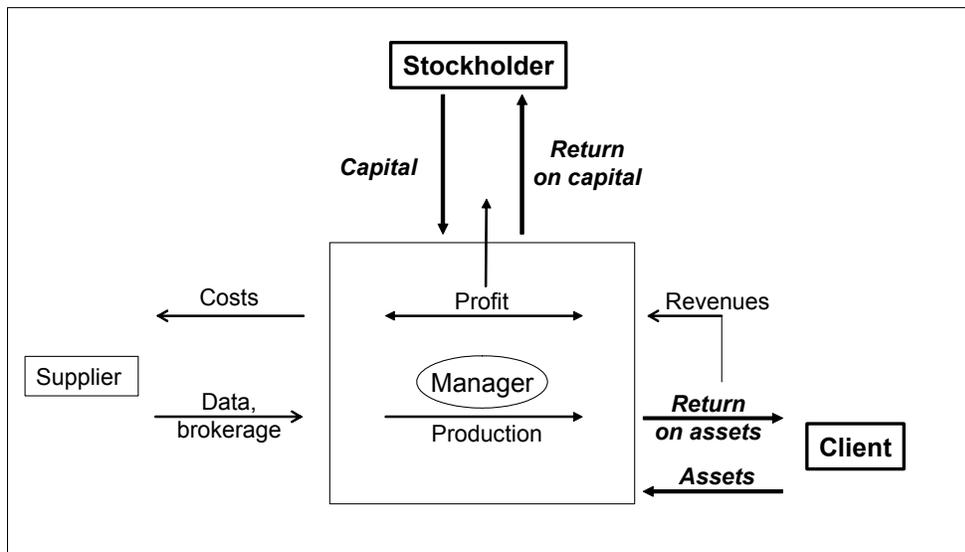
In turn, the firm's revenue consists of fees charged to the client as a function of the return produced for the client (the typical such function is specified in the analytical section below). To produce for the

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[27] Such minimization and maximization are certainly subject to several constraints.
[28] While the investment objective of the client might vary as mentioned before, managers are typically evaluated on the basis of return.

client, i.e., design and execute the investment strategy, the manager purchases information and trade-execution services. This results in the manager generating a return for the client. It also results in the manager creating a profit for stockholders. The manager gets paid according to the contract between himself and stockholders, which usually has a fixed salary portion for insurance and a variable incentive portion that depends on the firm's output (i.e., profit), which is a derivative of the output (i.e., return) for the client.

Note that the manager is an agent of both the client and the stockholder. He is tasked with both maximizing shareholder value and creating a high positive return on client funds. In fact, *the manager creates a profit for the stockholder by means of creating value for the client.* The manager of the financial firm (i.e., the asset manager) does interact with third parties, most notably suppliers, but again his duties to stockholders and clients demand that he seek to minimize costs, especially in terms of variable trade-execution costs as concerns the return of the client and in terms of fixed data costs as concerns the return of the stockholder.

Baseline: Moral hazard with shirking in non-financial firm

In order to facilitate the illustration of differences between financial and non-financial firm manager incentives, I first present a model of the non-financial firm that will serve as a baseline for comparison. The model is a routine and simple managerial behavior model under moral hazard and is provided for comparison purposes only (and not to introduce any new insight).

Assume the agent, the manager, to be risk-neutral, by which we can assume that his utility is a linear function of income and his expected utility is the utility of expected income. We could alternatively assume the agent to be risk averse with a concave utility function, but the linearity assumption facilitates the mathematical treatment of the expanded model in the case of the financial firmThe issue of risk aversion (i.e., the shape of the utility curve) is not central to the point of this chapter; how the utility function's maximand varies between financial and non-financial managers is.

Assume the manager does not engage in malfeasance, but he can choose to commit himself to his work to varying degrees. Under this classical shirking scenario, the manager chooses his effort level e to maximize his expected utility. The output q of the firm is a function of the manager's effort level and the state of nature θ, thus $q = q(e, \theta)$, where $\theta \sim N(0, \sigma^2)$, $q_e > 0$, and $q_{ee} < 0$. Exerting effort is

costly to the manager in terms of $c = c(e)$ with $c_e > 0$ and $c_{ee} > 0$. The manager is paid wages w as a function of the firm's output, $w = w(q)$. Then, the agent's utility is:

$$U(e,\theta) = w - c = w(q) - c(e) = w(q(e,\theta)) - c(e). \tag{1}$$

The manager will choose his effort level so as to maximize his expected utility[29]:

$$\frac{\partial EU}{\partial e} = 0 \quad \Rightarrow \quad w_q^* q_e^* - c_e^* = 0 \quad \Rightarrow \quad w_q^* q_e^* = c_e^*. \tag{2}$$

This is a familiar result under possible shirking: the agent chooses his effort level at the point where the marginal compensation from his effort equals the marginal cost of his effort.

Now, recognize that shareholders typically hire managers on incentive contracts of the form $w = a + bq$ where a is a constant reflecting the fixed salary portion of managerial pay and b is a constant reflecting the profit-sharing portion of managerial pay (i.e., the contract is exogenous to the manager – the objective here is not to evaluate incentive contracts but to incorporate them as they are typically employed). Then the manager's utility becomes

$$U(e,\theta) = w - c = w(q) - c(e) = a + b \cdot q(e,\theta) - c(e). \tag{3}$$

The outcome of expected utility maximization now becomes:

$$\frac{\partial EU}{\partial e} = 0 \quad \Rightarrow \quad bq_e^* - c_e^* = 0 \quad \Rightarrow \quad q_e^* = \frac{1}{b}c_e^*. \tag{4}$$

In another familiar result, the effort the manager will exert increases with b (i.e., the marginal cost of effort that the manager will bear increases with b). The presence of variable compensation through b dampens the need for monitoring by means of governance structures (such as a corporate board) as it incentivizes the manager to exert higher productive effort[30].

Financial firm: Moral hazard with shirking

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[29] E is the expectation operator.
[30] In fact, the extreme case of $b = 1$ is equivalent to an owner-managed firm, where the shareholder and the manager collapse into a single person, obviating the need for governance mechanisms entirely.

Changing the setting from the non-financial to the financial firm, the primary modification is that the manager becomes a fiduciary of the client, thereby performing for the client principal, in addition to the stockholder principal. Actually, the manager's job itself consists of managing the assets of the client.

The client principal chooses the manager to manage her assets of the amount A turned over to the financial firm under a custody account. By placing the client's assets in investments, the manager produces rate of return r on the assets, where $r = r(e, \theta)$, the return again being a function of the manager's effort and the state of nature. Thus, the productivity of the manager is assessed in terms of r.

The manager's production for the stockholder derives from the production for the client, as the firm's revenues consist of asset-management fees charged to the client:

$$q = q(r, A, f).$$ (5)

Asset-management fees are charged as a percent f of assets under management along with a performance fee as a percent of the incremental return above a benchmark rate such as a broad stock-market index[31]. For simplicity, ignore the performance-fee portion. Taking account of the growth in assets due to return produced over the investment period, assets subject to fees for the period are $(1 + 0.5r)A$, and the production of the firm from stockholder perspective becomes:

$$q = q(r, A, f) = f(1 + 0.5r)A.$$ (6)

In other words, the source of output in the financial firm is the output for the client principal. *It is only and directly as a result of the production for the client that the manager can produce for the shareholder*.

Turning to the manager's utility, consider again that the manager works under an incentive contract of the form $w = a + bq$. Substituting from (6), we get $w(r, A, f) = a + bq(r, A, f) = a + bf(1 + 0.5r)A$, and the manager's utility becomes:

$$U(A, b, e, f, \theta) = w - c = w(q) - c(e) = w(q(r)) - c(e) = a + bf(1 + 0.5r(e, \theta)A) - c(e).$$ (7)

Note that the corresponding managerial utility in a non-financial firm, (3), incorporates the shareholder-manager agency $q(e)$ only – the manager produces for the stockholder principal alone. However, in a

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[31] While contract structures are similar across firms, percentage fee rates may differ.

financial firm, management's utility as given in (7) incorporates *both* the shareholder-manager agency $q(e)$ and the client-manager agency $r(e)$. As captured by $q(r)$, the manager produces for the client at the same time he produces for the stockholder. While the specific functional form of q in terms of r will vary by type of financial firm, the essential relationship that $q = q(r)$ does not.

The outcome of this expected utility maximization becomes:

$$\frac{\partial EU}{\partial e} = 0 \quad \Rightarrow \quad bf\,0.5Ar_e^* - c_e^* = 0 \quad \Rightarrow \quad r_e^* = \frac{2}{bfA}c_e^*. \tag{8}$$

Here, the effort level of the manager is influenced not only by b as in (4), but also by f and A: the marginal cost of effort that the manager will bear increases with b, f, and A. Compared with the non-financial firm, the presence of variable compensation through f and A dampens the need for monitoring by means of governance structures, reducing the extent of the agency problem for *both* clients and stockholders.

Note that the variables b, f, and A relate specifically to the two agency relationships we consider here.

First, variable A is an element of the *client-manager agency*. The larger the amount of assets trusted by the client to the manager under the fiduciary relationship, the higher the equilibrium effort level by the manager. This also makes intuitive sense since the manager can derive more income from higher assets under management (in other words, holding the return constant, the larger initial client assets, the more his pay).

Second, the variable b is an element of the *stockholder-manager agency*. The larger the manager's share of the firm's output, the higher is his equilibrium effort level.

Last but not least, variable f reflects the formal relationship *between the two principals*: it is the key pillar of the contract between the client and the firm, setting forth exactly how the client pays the firm, i.e., how the output for the stockholder derives from the output for the client.

Baseline: Moral hazard with malfeasance in non-financial firm

Going back to the baseline case of the non-financial firm, now assume that there is no *productive* effort problem (no shirking) but a *destructive* effort problem instead. The manager can engage in malfeasance by misappropriating some of the firm's output, for instance. This is another important dimension of agency relationships: agents need to be monitored not only because they might compromise productive effort, relying on luck (state of nature) to determine the fate of the firm, but also because they can behave unethically and embezzle part of the output that belongs to the stockholder (principal).

For this model[32], assume that output q is a given (we ignore shirking) and that the manager exerts productive effort to create output independent of his malfeasance decision. Let m denote the percent of misappropriated output the manager can carve out for himself. He does this by spending destructive effort d, such that $m = m(d)$, and his income from malfeasance is thus $qm = qm(d)$, where $m_d > 0$ and $m_{dd} < 0$. Exerting effort is costly to the manager in terms of $g = g(d)$ with $g_d > 0$ and $g_{dd} > 0$.

The manager's illegal behavior can be detected by the stockholder with probability p^S, which depends on the amount and nature of monitoring done by the stockholder (e.g., by means of an audit committee) and therefore is a given for the manager. In case of detection, a sanction $z = z(m)$ is imposed on the manager where $z_m > 0$ (the higher the extent of theft, the more serious the punishment), and $z_{mm} > 0$ (as extent of theft rises, the severity of punishment rises even faster). Considering that $m = m(d)$, we have $z = z(m) = z(m(d))$.

While the manager gains directly from malfeasance, he indirectly loses some legitimate income since her compensation contract is based on output *observed* by the principal. In case of malfeasance, she observes not actual output q but output q^m after misappropriation, where $q^m = q(1-m) = q(1-m(d))$.

Thus, the manager's wages (i.e., legitimate income) are $w^m = a + bq^m = a + bq - bqm(d)$. So, the agent's utility includes legal wages, misappropriated income, and cost of illegitimate behavior, including the cost of effort and expected punishment:

$$U(a,b,d,p,q) = [a + bq - bqm(d)] + qm(d) - g(d) - p^S z(m(d)). \tag{I}$$

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[32] The setting is different but the variables refer to the same economic concepts, e.g., q refers to output in both shirking and malfeasance models.

The manager will choose effort level d so as to maximize his expected utility:

$$\frac{\partial EU}{\partial d} = 0 \quad \Rightarrow \quad -bqm_d^* + qm_d^* - g_d^* - p^S z_m^* m_d^* = 0 \quad \Rightarrow \quad q(1-b)m_d^* = g_d^* + p^S z_m^* m_d^*. \qquad \text{(II)}$$

This result has a familiar decision-at-the-margin pattern: the agent chooses his effort level at the point where the marginal gain from malfeasance, net of lost legitimate compensation (left-hand side of II) equals the marginal cost of malfeasance, including marginal cost of effort and marginal expected punishment (right-hand side of II).

We can rewrite (II) as follows:

$$m_d^* = \frac{1}{q(1-b) - p^S z_m^*} g_d^*. \qquad \text{(III)}$$

From (III) we can infer that the marginal cost of effort that the manager will bear is increasing in q and decreasing in b, p^S, and z_m^*.

A troubling implication is that as firm output increases the manager will engage in higher malfeasance effort since he stands to gain more from misappropriation. However, the dishonesty of the manager is attenuated by the level of b. As b increases, the manager stands to gain less from malfeasance net of his loss in legitimate income, so he has an incentive to reduce destructive effort[33].

Effects of how well misappropriation can be detected (p^S) and and how steep the sanction is with respect to the extent of malfeasance (z_m^*) are also straightforward and intuitive. Note that, in a corporate governance framework, the level of p^S can be interpreted as a proxy for the strength of the firm's board governance in general and the audit committee of the board in particular.

As concerns governance, there are two major implications, one related to compensation structure and another related to the audit function. The presence of a variable component in executive compensation dampens the need for monitoring as it incentivizes the manager to exert *lower levels of* dishonest effort.

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[33] Indeed, in the extreme case of $b = 1$, meaning an owner-manager, the role of q in (III) evaporates (malfeasance would just amount to stealing from oneself).

Further, assuming that the probability of detection is related to the diligence of the board, more effective audit committees would also result in the manager's engaging in less malfeasance.

Financial firm: Moral hazard with malfeasance

Changing the setting from the non-financial to the financial firm, we incorporate the notion developed above that production for the stockholder occurs via production for the client. However, under potential malfeasance, another key modification is that the manager-agent this time faces not one but three parties who monitor his actions and can punish him upon detected malfeasance: (1) the stockholder principal, (2) the client principal, and (3) regulators.

As in the case of the non-financial firm, the stockholder will monitor the actions of the manager and impose sanctions if necessary. In the financial firm, a reasonably prudent client would engage in some sort of monitoring of the asset manager. This can be done, for instance, by checking trade confirmations, portfolio status reports, and monthly account statements. Clients who hold mutual funds can also rely on fund boards for monitoring, just as the corporate board serves as monitor on behalf of stockholders. It's very easy for clients to punish managers by "voting with their feet" – they can just take their assets elsewhere, to other managers believed to be more honest (and as capable). A good example is the 2003-2004 client exodus experienced by certain asset-management firms when regulators discovered pervasive illegal mutual-fund practices in these firms in 2003.

As this example indicates, financial firms are also subject to monitoring by dedicated governmental regulators, with some sectors of the financial industry being monitored by self-regulatory organizations as well. Such authorities can impose their own sanctions on misbehaving managers, ranging in severity from negligible monetary fines all the way to lifetime bans from the industry. In a nutshell, the manager is monitored by three parties and can be sanctioned severally. This contrasts with the *typical* manufacturing firm where management is monitored by the stockholder principal only.

Under this modified monitoring landscape, the manager's illicit behavior can be detected by the stockholder with probability p^S, by the client with probability p^C, and by regulators with probability p^R. Each of these depends on the amount and nature of monitoring performed by the respective party and therefore is a given for the manager. The total probability of detection is a function of all individual

probabilities, but not necessarily equal to a straight sum due to interdependencies among the probabilities. Such interdependency exists because monitorers peruse partly overlapping sources of information, although their own monitoring activities and powers might be separate from one another.

For simplicity, however, assume that detection probabilities are mutually exclusive such that total probability of detection is $p^F = p^S + p^C + p^R$. In case of detection, the manager faces sanction $z^S = z^S(m)$ by the stockholder, sanction $z^C = z^C(m)$ by the client, and sanction $z^R = z^R(m)$ by the regulator, where again $z_m > 0$, and $z_{mm} > 0$. So, at issue is a total sanction of $z^F(m) = z^S(m) + z^C(m) + z^R(m)$. Considering that $m = m(d)$, we have $z^F(m) = z^F(m(d))$.

As with the non-financial firm, assume for this model that client output r (rate of return produced on client assets) is given, as we have assumed no shirking. Let m again denote the percent of embezzled client output the manager can carve out for himself. He does this by spending destructive effort d, such that $m = m(d)$, and his income from malfeasance is thus $rAm = rAm(d)$, where $m_d > 0$ and $m_{dd} < 0$. Similar to the non-financial firm, effort comes at cost $g = g(d)$ to the financial manager with $g_d > 0$ and $g_{dd} > 0$.

The manager indirectly loses legitimate income, since his compensation contract is based on output observed by the client *and* the stockholder. The client observes not actual return r, but return r^m after misappropriation, where $r^m = r(1 - m(d))$. In turn, the stockholder observes not actual firm output q but output q^m after misappropriation, where $q^m = q^m(r^m, f, A) = f[1 + 0.5r(1 - m(d))]A$. Since the manager's contract is based on output observed by the stockholder, his wages are $w^m = a + bq^m = a + bf[1 + 0.5r(1 - m(d))]A$. The resulting managerial utility is:

$$U(a, A, b, d, f, p, r) = a + bf[1 + 0.5r(1 - m(d))]A + rAm(d) - g(d) - p^F z^F(m(d)). \qquad \text{(IV)}$$

The result of expected utility maximization by choosing effort level is:

$$\frac{\partial EU}{\partial d} = 0 \quad \Rightarrow \quad -bf 0.5rAm_d^* + rAm_d^* - g_d^* - p^F z_m^{F*} m_d^* = 0$$

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$$\Rightarrow \quad rA(1 - bf\,0.5)m_d^* = g_d^* + p^F z_m^{F*} m_d^* \qquad\qquad . \tag{V}$$

Similar to the non-financial manager, the financial manager chooses his effort level at the point where the marginal gain of malfeasance equals the marginal cost of malfeasance . The marginal cost of effort that the manager will bear is increasing in r and A and decreasing in b, f, p^F, and z_m^{F*}. Note that this result comprises key differences from the non-financial firm result. To isolate the differences better, we rewrite (V) as:

$$m_d^* = \frac{1}{(1 - bf\,0.5)rA - p^F z_m^{F*}} g_d^* \tag{VI}$$

As in the shirking scenario, variables b, f, and A that are related to the two agencies we consider directly impinge on the optimizing behavior of the manager-agent. Furthermore, and perhaps more importantly, supplemental monitoring and sanctioning by the additional principal and regulators kicks in and further modifies managerial incentives.

The analysis of malfeasance up to this point assumes that embezzlement occurs at the client level, i.e., m applies to client output r. Alternatively, malfeasance could be modeled to occur at the shareholder level, applying m to q instead of r. In that case, observed shareholder output would become $q^m = (1-m)q = (1-m)q(r,f,A) = [1-m(d)]f(1+0.5r)A$. Skipping a few steps in the derivation, the result of expected utility maximization would become:

$$m_d^* = \frac{1}{(1-b)f(1+0.5rA) - p^F z_m^{F*}} g_d^* \tag{VI-A}$$

(VI-A) is not very different from (VI). While the expected impact of b, f, and A might quantitatively differ, qualitatively they feature in the same role, and monitoring and sanctioning variables have exactly the same role.

Regardless of at what level malfeasance occurs, we can reasonably expect that total probability of detection with three monitorers (including the interdependencies among the probabilities) will be higher than that with only the stockholder monitoring the manager. While the existence of three separate monitorers might cause monitoring to become a quasi-public good with partial free-riding behavior by

one or two monitorers, this should not totally cancel out the contribution of two more monitorers. Similarly, we can reasonably expect the punishment curve to be steeper in the presence of three potential punishers compared with when only the stockholder can sanction the manager.

In the governance framework, this means that the board of directors of the financial firm is not alone – it is supplemented by client scrutiny of managerial actions and by regulatory oversight – as concerns potential malfeasance. This overlaps well with Adams and Mehran's (2003) argument that directors find it easy to monitor banks compared with manufacturing firms because bank directors also have access to reports of bank regulators.

<u>Summary of models</u>

Table 3.2 provides a summary of the results of all four models developed.

Table 3.2 – Model comparison

	Non-financial firm	Financial firm
Moral hazard with shirking	$$q_e^* = \frac{1}{b} c_e^*$$	$$r_e^* = \frac{2}{bfA} c_e^*$$
Moral hazard with malfeasance	$$m_d^* = \frac{1}{q(1-b) - p^{NF} z_m^*} g_d^*$$	$$m_d^* = \frac{1}{rA(1-bf0.5) - p^F z_m^{F*}} g_d^*$$

All individual results provide implications about the effort level of the agent-manager and how he might be incentivized: about productive effort e in the shirking scenario, and about destructive effort d in the malfeasance scenario. The results do not necessarily allow for quantitative comparisons between non-financial and financial firms since the output variables in the final equations differ between financial and non-financial cases (q vs. r , respectively). However, it is possible to make qualitative comparisons in terms of the things incentivizing the manager and in what direction they are shaping his behavior.

As concerns shirking, in a non-financial firm, the variable compensation part of manager's total pay, as captured by b in the equation, provides an incentive not to shirk. A higher b will enable the manager to bear higher cost of effort, thus exert higher effort. In the case of the securities firm, due to the nature of production, elements of the additional agency come into play. The size of assets (A) trusted by the client to the manager impacts the level of shirking, as does the fee arrangement (f) that determines how output is shared between the two principals, and both work in the same direction as incentive compensation b.

As concerns malfeasance, in a non-financial firm, variable compensation (b) goes parallel with possible sanctions (z) if he's caught (p) in providing incentives not to embezzle. Lower values of all three constructs would enable the manager to bear higher cost of destructive effort, thus try to engage in more malfeasance. In the case of the securities firm, elements of the additional agency again join the picture. Possible sanctions and executive compensation act in the same direction as they act with the non-financial firm, however, now we have a different monitoring regime with three parties (stockholder plus client and regulator).

In governance terms, note that setting executive compensation is a task of the board of directors. Also, in a non-financial firm, monitoring and possible sactioning of the manager is done by the board only (customers care about the product, not about how much the company is earning). Hence, in a non-financial firm, incentivizing the manager not to shirk or embezzle falls completely on the shoulders of directors. In a financial firm, however, directors are not alone, which leads us into the next section.

Governance implications of model results

<u>Board oversight is less important for financial firms relative to non-financial ones</u>

Financial firms have a particular nature with the presence of another principal and regulators. Model results suggest that, in addition to executive compensation which is also at work in non-financial firms, the existence of a second principal and a third monitor further shape the incentives of managers.

As concerns shirking, managerial effort is driven not only by the contract between the shareholder and the manager (i.e., variable compensation rate), but also by that between the shareholder principal and the client principal (i.e., fee rate) and by the amount of trust placed in the manager by the client (as proxied by assets under management).

As concerns malfeasance, dishonest managerial effort is further impacted by the differential monitoring scheme which includes not only the stockholder principal as overseer but also the client principal and governmental and sectoral regulators. When the manager's behavior is monitored by three parties instead of one and when he faces several sanctions instead of one if caught misbehaving, he will have higher incentives to avoid illicit income.

Recall that the board of directors exists to bridge the gap between ownership and control, i.e., between the stockholder principal and the manager agent. If the nature of the financial firm with another principal of the same agent and regulatory oversight indeed provides for a better alignment of manager and stockholder interests, then this would suggest a smaller role for and smaller impact by the board. Hence, we could put forward the following hypotheses:

(1) the board has a less important duty in financial firms than in non-financials;

(2) the performance of financial firms is less sensitive to board oversight than the performance of non-financials.

The first hypothesis could be tested by comparing board structures of financial and non-financial firms. For instance, if the board's role is less critical, we would expect financial-firm boards to be less independent of management. The second hypothesis could be tested empirically by assessing the relationship between performance and board structure in financial firms. For both hypotheses, findings from extant research on governance of non-financial firms would serve as comparison baselines.

Regulators might exist due to absence of a board for client principals

In the non-financial firm, there is a single agency relationship, and the board of directors exists as a governance mechanism explicitly dedicated to bridging the gap between stockholders and managers. Directors are tasked with representing the interests of shareholders. In the financial firm, another agency exists between clients and managers, but there is no structure comparable to a board of directors for monitoring the manager on behalf of clients. An exception is mutual funds where fund boards do exist, but there is no such structure for bank depositors, insurance policy holders, brokerage clients, or owners of assets managed outside mutual funds. However, the client-manager agency is not necessarily less important, and perhaps more important, than the stockholder-manager agency, since it is the actual source of production in the financial firm. And clients are typically as numerous and dispersed as are public-company stockholders. Yet, for one reason or another, markets or governments have not produced such a standard structure in the financial industry.

So, it is not surprising that heavy regulation is the norm in finance but the exception in manufacturing and services. Corporate boards are present in every type of business to protect shareholder interests. Missing an institutionalized vehicle analogous to a board, client principals are more vulnerable to managerial

shirking and malfeasance than shareholder principals. Thus, regulators whose mission is to protect *clients* have emerged in the financial industry.

Focus on making financial-firm boards stronger might be misguided

The mutual-fund market-timing scandal that surfaced in 2003 led, among other things, to refueled focus by regulators on investment-company governance. SEC proposed a rule that mutual-fund boards be independent at supermajority level and that they be chaired by an independent director. Upon appeal, these rules were struck down twice by federal court due to lack of cost-benefit analysis, a routine procedural part of any proposed regulation, and lack of empirical analysis that would suggest that more independent fund boards are more effective. SEC, however, is still seeking to adopt the rule.

Recent turmoil in capital markets caused by subprime mortgage defaults, the resulting collapse of several hedge funds, the failure (and bail-out) of a major investment bank, and fears that more could be on the brink of failure might well prompt regulators to focus on the governance of securities firms *themselves* this time, in addition to that of mutual funds managed by these firms. It is doubtful, however, that such motivations are driven by economic analysis as much it is driven by an instinct to protect investors.

Results from theoretical models above suggest that how corporate boards are structured and operate might not be as crucial to the performance of financial firms compared with non-financial firms. In case this indication is confirmed by the empirical analysis to follow, then it would strongly suggest that any regulatory initiative to require financial-firm boards to be, among other things, more independent, would be hardly justified from a benefit viewpoint.

CHAPTER 4: EMPIRICAL ANALYSIS

In this chapter, I first present the empirical model used in this research to estimate governance-performance relationships. Then I describe the sample and provide variable definitions, including response variables, key variables of interest, and control variables. Selected summary statistics are accompanied by a comparison of findings with those for non-financial firms obtained from governance literature. These are followed by estimation results of firm value and profitability, using ordinary least squares and fixed effects. The chapter concludes with a preliminary extension of the model to include a new construct, director expertise.

Estimation techniques in the literature

Hermalin and Weisbach (2003) remark that an important issue complicating empirical work on boards (as well as on governance in general) is that "almost all variables of interest" are potentially endogenous. For instance, firm performance can be both a result of prior board actions and a factor that impinges on future board structure. Nonetheless, to this day, prevalent in the literature are studies that simply estimate firm outcomes as a function of board characteristics (controlling for other governance mechanisms and firm attributes)[34]. Some of these handle potential endogeneity by lagging response variables capturing firm outcomes. Others probe endogeneity of board characteristics to firm outcomes and fail to reject lack of endogeneity for their sample. Yet others estimate a system of equations and/or employ instruments for some variables suspected to be endogenous. However, many of the studies using more sophisticated approaches don't find a change in results compared with simple OLS regression of performance on board

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[34] My reading of the literature suggests that studies exploring a new idea empirically tend to focus on OLS estimations and those that seek to challenge or expand on prior empirical findings tend to use more sophisticated estimations.

structure. Also, while OLS estimates might be biased in the presence of endogeneity of explanatory variables, simultaneous equations estimates are known to suffer from specification error.

The popular use of cross-sectional data precludes the exploitation of firm-level fixed effects in the overwhelming majority of studies. As such, most studies suffer from potential contamination of key-variable coefficients with firm-level unobservables. While cross-sectional data do not necessarily preclude the application of industry-level fixed effects, few studies have used them. Those studies employing fixed effects generally report considerable changes in coefficient magnitudes, signs, and levels of significance along with the expanded specification.

Empirical approach

Keeping with the empirical tradition in governance research, I model firm performance as a linear function of several variables reflecting board structure, other governance mechanisms, and other firm-level variables. The panel nature of my data allows for inclusion of fixed effects for years and firms in an effort to capture unobserved time effects and unobserved time-nonvariant firm characteristics:

$$P_{it} = \alpha + B_{it}\beta + G_{it}\gamma + X_{it}\delta + \mu_i + \tau_t + \varepsilon_{it} \,.$$

Here,

- P_{it} is performance (alternatively, Tobin's Q, ROA, or ROE) of firm i in year t,
- B_{it} is a vector of board structure variables such as board size and board independence,
- G_{it} is a vector of variables reflecting other governance mechanisms such as blockholder ownership and executive pay,
- X_{it} is a vector of observed firm-level characteristics such as firm size and diversification,
- μ_i and τ_t are fixed-effect terms for firm i and year t respectively,
- ε_{it} is a random disturbance assumed to be i.i.d.

The main purpose of the regression analyses and the research is to find out whether and how board characteristics affect corporate performance. Therefore, elements of the vector β are the coefficients of primary interest.

With the panel data set, I am able to estimate the relationships of interest using firm and year fixed effects (FE). The use of firm-level fixed effects should shrink omitted variable bias, an important potential concern in isolating the effects of the variables of interest. For instance, different firms have different corporate cultures (e.g., a rigid and lethargic hierarchy versus a flat and dynamic organization) which should be captured by firm dummies. Similarly, the use of year fixed effects should isolate temporal influences, like a stock-market decline, that affect the profits and value of all firms in the sample during the same year. Due to the time-series dimension of the data, I also obtain GLS estimates that incorporate AR(1) terms.

Sample

The starting point for the sample is the universe of U.S.-based public firms filing with the SEC. Using SEC's online Electronic Data Gathering, Analysis, and Retrieval (EDGAR) database for company filings, I identify all public firms that are commonly referred to "securities firms": investment-management (asset-management) firms, brokerage firms, and investment banks (underwriters). Formally, asset-management firms are classified in SIC code 6282, called "Investment Advice". Similarly, brokerages and underwriters are in SIC code 6211, called "Security Brokers, Dealers and Flotation Companies". EDGAR includes all firms that have filed electronically with the SEC (typically since 1994), including those who have ceased to file later. As of March 5, 2008, EDGAR contains 108 firms in SIC code 6282 and 196 firms in SIC code 6211[35].

I choose the period from 1999 through 2007 for sampling for two reasons. First, this period comprises the end of a long bull market (1999), a bear market (2000 through 2003), a bull market (2004 through 2006), and the onset of a bear market (2007). The performance of financial firms is highly sensitive to the conditions in capital markets. As asset prices go up (bull markets), assets under management grow, bringing in more asset management fees. Similarly, in bull markets, investors become more optimistic, executing trades more frequently, yielding more brokerage commissions for securities firms. Therefore the 1999-2007 period should provide ample longitudinal variation in profits and firm value for the securities industry, in addition to cross-sectional variation that should occur in any given year. Second, this period has witnessed a number of governance reforms, particularly the passage of the Sarbanes-Oxley

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[35] Firms might be active in more than one SIC code, as I report below. Based on my reading of annual reports, EDGAR's SIC classification appears to be driven by the primary line of business of the firm in question.

Law in 2002 and accompanying rulemaking by stock exchanges. This can be expected to provide sizeable variation in governance structures of securities firms on a longitudinal basis.

I examine the filings of all SIC code 6282 and 6211 firms and identify those that have filed proxy statements (Form DEF14A) each year from 1999 through 2007. Proxy statements which are filed ahead of annual meetings provide the data source for board characteristics. This effort yields 26 firms in 6211 and 11 firms in 6282 for a total of 37 firms ("EDGAR firms" henceforth).

I augment the EDGAR search by verifying stock-market listings of the 37 firms and all other securities firms as of the same date. This is necessary for three reasons. First, some of the sampled firms might have filed a proxy in 2007 (typically between March and May) but have ceased to be public sometime later in 2007. Such firms must be dropped from the sample because, although they have governance data for 2007, they lack performance data for 2007. Second, some of the sampled firms might not be listed on any major stock exchange, instead trading in the over-the-counter market (OTC) because they fail to satisfy market-capitalization or trading-volume thresholds of exchanges. Such firms should be dropped from the sample because their valuations do not reflect their underlying fundamentals. Third, firms which have a majority shareholder qualify as "controlled companies" and are not required to file proxy statements, although they are required to report governance data in their annual reports (Forms 10-K). Such firms that also show up in exchange listings should be added to the sample since they do provide governance data by other means.

Therefore, I scan the listed-firm directories of the New York Stock Exchange (NYSE), National Association of Securities Dealers Automated Quotation System (NASDAQ), and the American Stock Exchange (AMEX). I also examine by-industry lists of all firms whose stocks are traded in the U.S. as provided by Yahoo Finance. I omit two EDGAR firms that are no longer public companies at the end of 2007. I also remove three EDGAR firms that are traded OTC. Further, I locate and add to the sample two firms in controlled-company status, not filing proxy statements but being public throughout the sampling period.

As a final step, I examine the annual reports (10-K) of all EDGAR firms for 1999 to check whether these firms have been securities firms from the first year of the sampling period. EDGAR classifies firms according to their SIC as of the inquiry date, which does not necessarily mean that all EDGAR firms were securities firms in 1999. I omit two firms that are in this situation.

Table 4.1 -- Sample firms

	Market Capitalization ($ billion)	Assets Under Mgmt ($ billion)	Securities Business Lines		
			Asset management	Brokerage	Securities Underwriting
Affiliated Managers Group	3.3	274.8	x		
Alliance Bernstein Holding	6.5	800.0	x		
BlackRock, Inc.	25.2	1,356.6	x		
Broadpoint Securities Group, Inc.	0.1	-	x	x	x
Charles Schwab Corp.	29.7	285.0	x	x	
Diamond Hill Investment Group Inc.	0.2	4.4	x		
E*TRADE Financial Corporation	1.6	0.0		x	
Eaton Vance Corporation	4.3	161.7	x		
Federated Investors Inc.	4.2	301.6	x		
Franklin Resources Inc.	27.4	645.9	x		
Gamco Investors, Inc.	2.0	31.0	x		
Goldman Sachs Group Inc.	84.0	868.0	x	x	x
International Assets Holding Corp.	0.2	1.3	x	x	
Investment Technology Group Inc.	2.1	0.0		x	
Jefferies Group Inc.	2.9	5.8	x	x	x
Knight Capital Group Inc.	1.3	3.9	x	x	
Legg Mason Inc.	9.9	998.5	x		
Lehman Brothers Holdings Inc.	34.8	282.0	x	x	x
Merrill Lynch & Co., Inc.	50.2	-	x	x	x
Morgan Stanley	56.1	782.0	x	x	x
Raymond James Financial Inc.	4.0	37.1	x	x	x
Sanders Morris Harris Group, Inc.	0.3	-	x	x	x
SEI Investments Co.	6.3	197.0	x		
Siebert Financial Corp.	0.1	0.0		x	x
State Street Corp.	31.4	1,979.0	x		
Stifel Financial Corporation	0.8	6.7	x	x	x
SWS Group, Inc.	0.3	7.0	x	x	x
T. Rowe Price Group, Inc.	16.1	400.0	x		
TD AMERITRADE Holding Corporation	11.9	0.0		x	
The Bear Stearns Companies Inc	10.0	42.7	x	x	x
U.S. Global Investors, Inc.	0.3	5.0	x		
Waddell & Reed Financial Inc	3.1	64.9	x		
Total	430	9,542			

Market capitalization and assets under management are as of end of 2007.

Business lines are depicted as of 2007; corporate portfolios might have changed during sampling period.

The final sample (see Table 4.1) consists of 32 securities firms observed over a period of nine years, yielding a panel of 288 firm-year observations. Sample firms as a whole were managing $9.5 trillion as of the end of 2007. This set of firms provides a well-rounded distribution of firms by size, mitigating possible concerns of small-firm or large-firm bias: eleven are part of the S&P 500[36], eight are part of the

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[36] Large firms with median market cap of $10.4 billion (as of March 2008).

Russell 1000[37] but not the S&P 500, eight are part of Russell 2000[38], and one is part of Russell Microcap[39]. While my sample size might seem small at first glance, in the majority of governance research the number of observations is in the order of hundreds (in the order of dozens on some occasions).

Data sources

Proxy statements (Form DEF14A) filed by public companies (and annual reports in a few controlled-company cases mentioned above) provide information on the board of directors, executive compensation, and stock ownership by insiders and blockholders (holding 5% or more of stock). I hand-collect and code all such data from 288 separate filings. Depending on the firm in question, proxy statements (and annual reports) are accessible by one or more of the following: EDGAR, investor relations sections of firms' web sites, websites of stock exchanges where the firms are listed, and Lexis/Nexis.

Financial-statement and segment data are obtained from Compustat North America maintained by Standard & Poor's. In the case of eleven firms whose fiscal years are different from the calendar year, I shift quarters accordingly, so that financial statements are comparable across firms. Data for market capitalization and first public listing date are obtained from CRSP US Stock Database maintained by the Center for Research in Security Prices (University of Chicago).

A note on measurement

As mentioned above, board variables are from proxy statements which are typically issued in March and provide the slate of directors standing for election at the upcoming annual meeting in April. Usually, proposed directors hold office as of the date of the proxy. However, boards may appoint directors any time throughout the year, including in a board meeting held *immediately* after an annual meeting, and directors present in March can leave the board during the remainder of the year, which is actually the greater part of the year. Therefore, the set of directors that govern a firm during the *entirety of a given year* cannot be obtained simply from a *snapshot* pertaining to a spring month of that year.

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[37] Large and medium scale firms with median market cap of $4.8 billion (as of March 2008).
[38] Smaller firms with median market cap of $0.5 billion (as of March 2008).
[39] Median market cap of $0.15 billion (as of March 2008).

Since I have proxy statements of consecutive years, I combine information from year t's proxy with information from t+1's proxy and t-1's proxy to develop more accurate measures of board variables than is typical in governance research. My criterion for counting a given director for a given year is the presence of that director for at least half of that year. To illustrate, a director that is elected in the April annual meeting for the first time (and thus appears on that year's proxy) but resigns in August is not counted. This director, although holding office for only four months, would be counted for the entire year in typical governance research. Conversely, a director that is absent in year t's proxy can be learned from year t+1's proxy to have had a board seat from May of year t onward. That director would be absent in typical governance research although she has served for most of the year.

Governance research overwhelmingly uses cross-sectional samples (e.g., Morck et al 1988, Tufano & Sevick 1997, Ferris et al 2003, Faleye 2007) and thus misses any change to the board during the year considered subsequent to the proxy date. As for the small number of panel-data studies, none that I have reviewed mentions an effort similar to mine.

Corporate performance variables

The vast majority of studies in governance and performance use Tobin's Q as measure of corporate value (e.g., Yermack 1996, Bebchuk & Cohen 2005, Faleye 2007, Coles et al. 2008). Many of these studies also look at accounting measures of profitability such as return on assets or equity. A minority of studies concentrate on accounting performance only. A different set of studies, typically those which assess the effects of events such as director appointments or retirements consider stock returns in an event-study framework. A yet smaller subset looks at long-term stock returns and long-term operating profitability. In my research, I follow the bulk of the literature and focus on value at the end of a given year and profitability for that year as indicators of corporate performance.

<u>Value creation</u>

Among those using Tobin's Q as performance measure, most operationalize Q as follows. The denominator, in theory the replacement cost of the firm's assets, is taken as the book value of the firm's assets. The numerator, in theory the market value of the firm's assets, is taken as the sum of the market value of the firm's stock and the book value of the firm's debt. Chung and Pruitt (1994) show that this

simplified computation of Q actually explains at least 97% of the variability of a more theoretically correct computation as performed by Lindenberg and Ross (1981).

In line with the literature standard, I use Tobin's Q as measure of corporate value, operationalized as follows. The replacement cost of the firm's assets is proxied for by the book value of the firm's assets (the denominator). The market value of the firm's assets is proxied for by the sum of the market value of the firm's stock and the book value of the firm's debt (the numerator).

Accounting performance

Return on assets is a measure of profitability that scales profit created in a given period, most naturally the fiscal year, by the assets used for producing that profit. It is a measure of how well management uses assets to create profit. For assets, some studies use beginning-of-year value of total assets. Others take the average of beginning and ending values of total assets. For profit, most studies use earnings before interest and tax (EBIT) or earnings before interest, tax, and depreciation and amortization (EBITDA), the latter of which basically equals the operating cash flow of the firm for the period. Others use earnings before tax or net earnings. Return on equity operates on the same principle but uses shareholder's equity instead of assets to scale period profit.

Actually, the correct denominator for ROA is operating cash flow and the correct denominator for ROE is net income. What's relevant for ROA is the firm's profit that will be distributed to all claimants on the firm, including debtholders, shareholders, and government. Therefore, the correct measure of profit is profit before interest payments and taxes. As for ROE, the relevant thing is earnings directly distributable to equityholders.

Thus, I operationalize return on assets (ROA) as the ratio of income before interest and taxes (commonly known as EBITDA) in a given year to average total assets for that year. Similarly, I compute return on equity (ROE) as the ratio of net income in a given year to average equity for that year.

Table 4.2 provides a listing of all variables and summary definitions.

Table 4.2 -- Variable definitions

Variable type	Variable	Definition
Corporate performance	Firm value (Tobin's Q)	Ratio of market value of assets to book value of assets
	Profitability (return on assets)	Operating cash flow divided by average assets
	Profitability (return on equity)	Net income divided by average equity
Board characteristics	Board size	Number of directors
	Board independence	Number of independent directors divided by board size
	CEO/chair duality	One if CEO is also board chair; zero otherwise
	Classified board	One if directors are elected to staggered terms; zero otherwise
	Multiple directorships	Average number of public-board directorships of independent directors
	Busy board	One if majority of independent directors are "busy"; zero otherwise
Executive and director incentives	Variable CEO pay	Proportion of variable pay in total CEO pay
	Incentive pay for directors	One if directors are paid in stock options or grants; zero otherwise
Ownership structure	Independent blockholder ownership	Percentage of voting stock held by independent blockholders
	Board ownership	Percentage of voting stock held by all directors
	Independent director ownership	Percentage of voting stock held by independent directors
	CEO ownership	Percentage of voting stock held by CEO
Firm characteristics	Firm size	Log of total revenues for the year
	Leverage	Ratio of long-term debt to equity
	Growth opportunities	Ratio of capital expenditures to revenues
	Firm age	Number of years since firm appears in CRSP
	Diversification	Number of segments

Board of directors variables (Variables of primary interest)

Size

Board size is typically measured as the number of directors on the board. Some studies use the logarithm, although they do not provide a rationale for such a choice. I measure board size as the number of directors on the board.

Composition

Board independence is typically measured as the proportion of independent directors on the board. Sometimes this is accompanied or replaced by a dummy for the majority (or supermajority) of directors being independent. Some research also uses the proportion of grey (affiliated) directors as a covariate to highlight the difference between grey outsiders and independent outsiders.

For the purposes of this study, directors employed by the company are classified as insider directors. All remaining directors are outside directors. Outside directors who are affiliated with the firm or its management in any way other than sitting on the firm's board are classified as gray directors. While gray directors are nominal outsiders, due to their non-governance relationships such as being an adviser to the firm or being the president of a university to which the firm makes donations, they cannot be reasonably expected to be independent. Non-gray outside directors are classified as independent directors.

I compute independence variables as the ratio of the number of directors of a given type (insider, gray, or independent) to the size of the board.

Leadership

Board leadership is almost always captured in a dummy which equals one if the CEO is also the chair of the board (in other words, chair/CEO duality exists) and zero otherwise. A few studies expand this concept to (lack of) chair independence, where the dummy equals one if any executive (not only the CEO) or retired executive holds the chairman position. I follow the literature standard.

Classification

Board classification is always captured in a dummy which equals one if there exist classes of directors with accompanying staggered-term elections and zero otherwise. I follow the literature.

Multiple directorships

Multiple directorships are measured in two broad ways with some variants. One subset of research averages the number of board seats per director (or outside director). A variant of this uses the average number of external board seats per director (or outside director). Other, more recent research assumes a threshold level of three board seats for director "busyness" and computes the percentage of "busy" directors or uses a dummy for a majority of "busy" directors. Three board seats proxy for the point beyond which demand for time and attention starts compromising a director's monitoring abilities. Researchers admit that the choice of three here is arbitrary and attribute it to a tradition that started with the recommendations of a "blue-ribbon panel."

For a given director, the number of public-firm boards he/she sits on, including the firm's board itself, is the number of directorships. Averaging this across independent directors yields the multiple directorships variable. In line with the recent stream, I also compute the percentage of independent directors who sit on three or more public-company boards, i.e., are "busy". Board "busyness" is a dummy that equals one if the majority of independent directors are busy, and zero otherwise[40].

Other governance mechanisms

Ownership structure

Concentrated ownership is used as a control variable or key explanatory variable in many studies. Researchers typically proxy for such ownership by means of a dummy for the presence of a blockholder (holding 5 percent or more) or by total ownership by blockholders. One variant is percentage ownership by institutional shareholders. While blockholders usually are institutional, they can sometimes be, especially in smaller firms, members of executive management, commonly but not always the CEO.

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[40] Following relevant research, I ignore whether independent directors are "professional directors" or have full-time jobs elsewhere. Ideally, the latter would also impinge on the "busyness" level of the director.

As insider blockholders cannot be expected to exercise independent oversight, I consider total percentage of outstanding voting stock held by independent blockholders. I also measure the percentage of voting stock held by the CEO. To take into account ownership effects of not only the CEO but the entire top management team and board, I further consider the percentage of voting stock owned by all executives and directors. The percentage of voting stock owned by independent directors only is also measured.

Executive and director incentives

Incentives provided by the CEO's compensation package are typically measured as the proportion of variable compensation in total pay. Sometimes the sensitivity of CEO pay to shareholder value is used as well, but that requires a separate estimation for each firm in the data. Following the usual and simpler approach, I compute the proportion of variable CEO compensation as the ratio of variable pay (cash and stock bonuses, long-term stock awards valued at award date, income from option exercises, and other income) to the sum of variable pay and salary.

In the few studies they are used, director incentives are proxied by a dummy for the presence of incentive compensation (via stock and/or option grants), or by the share of equity-based compensation in total compensation. The latter is subject to measurement error as corporations were not required to disclose (and therefore did not disclose) total director compensation until 2007. I use the dummy approach.

Other control variables

Other controls include firm-level characteristics that can be expected to influence firm performance, how investors value the firm, or both, as typically used in the literature.

Fim size

Firm size may affect both firm value and current profitability due to economies of scale. Researchers control for firm size using total assets (e.g., Cheng 2008), revenues (e.g., Fich & Shivdasani 2006), or capital (e.g., Yermack 1996) (each possibly specified in log form). However, total assets and capital are direct inputs to the computation of my response variables. Total assets are the denominator of both Q and ROA, and capital makes up an important portion of assets. As such, total assets or capital by default

correlate with the response variables. Revenues is therefore the only appropriate variable for controlling for firm size. I use its logarithm as is often done in the literature.

Growth opportunities

Firm value (in theory, the discounted stream of future cash flows) should depend on future growth opportunities. Widely used proxies for these include current capital expenditures (e.g., Yermack 1996) or R&D expenditures (e.g., Coles et al. 2008), scaled by firm revenues or total assets. Current profitability, however, cannot depend on future opportunities, so there's no need to control for growth opportunities in assessment of governance's impact on ROA or ROE. I measure growth opportunities with capital expenditures scaled by firm revenues[41].

Leverage

Leverage is measured as the proportion of debt in the firm's capital structure, almost always operationalized as the ratio of debt to equity (or assets). I use equity as the denominator.

Diversification

Research has consistently found that diversification reduces firm value (e.g., Berger and Ofek 1995 without industry focus, Laeven and Levine 2007, for financial firms). Diversified companies also might have larger boards if boards grow in tandem with acquisitions or boards may seek director expertise for a larger number of business lines. Research has typically proxied for diversification by the number of business segments as disclosed by firms, which I follow. In the context of the securities firm, brokerage, asset management, and underwriting are different business lines, and firms can and do enter and quit new business lines over time, resulting in both within and between firm variation in my sample in terms of diversification.

Firm age

Some researchers control for firm age. Younger firms are more likely to be higher-growth firms, and older firms are more likely to have established brands that would enable stronger product differentiation. The first correlate of youth would affect firm value, and the second would influence both current

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[41] R&D spending is typically absent in financial firm statements.

profitability and firm value. Research has defined firm age referring to either date of incorporation or date of public listing. I use the latter, based on the first year the firm appears in the CRSP database.

Summary statistics

Table 4.3 provides sample medians, means, and standard deviations for all variables.

The average securities-firm board has nine or ten members, exhibits CEO & chair duality, is not classified, has a clear majority of outside members but, given considerable presence of grey directors, lacks a majority of independent directors. This paints a mixed picture in terms of expected monitoring effectiveness. On the one hand, low occurrence of classification implies accountable directors that stand for re-election each year. On the other hand, an independence level of only 45%, where independents are outnumbered by insiders and affiliates, suggests low monitoring capability by the board. We can recall that duality is not necessarily bad for shareholders, and the literature offers no clear prescription in terms of board size.

The variables reflecting executive and director incentives indicate that securities firms use incentive pay extensively for executives and directors alike. For CEOs, variable pay constitutes 77% of total compensation on average (90% at the median). The average director also has incentive pay, typically in the form of director's fees being paid in part in company stock (though due to lack of data I cannot ascertain the proportion of incentive pay in total director pay). In general, we would expect the structure of CEO and director compensation in securities firms to align shareholder and manager interests.

As for ownership structure, the average CEO and board hold non-trivial shares of company stock (13% and 20% on average, respectively) . In fact, given the diffuse shareholder base for many of the firms in the sample, stock held by the board might be large enough to shape or even control voting outcomes. Further, stock held by independent directors, those who are expected to monitor management on behalf of all shareholders, is a paltry 1.2% on average (0.1% at the median). Similarly, stock held by independent blockholders averages below 10% of the total, roughly at par with CEO shareholding (considering both mean and median values). Overall, it appears that corporate insiders and their affiliates would have the upper hand compared with independent shareholders and directors.

Table 4.3 -- Selected summary statistics

	Median	Mean	St. Dev.
Board characteristics			
Board size	9	9.7	3.2
Proportion of outside members	0.71	0.70	0.17
Proportion of independent members	0.44	0.45	0.21
CEO/chair duality	1	0.7	0.5
Classified board	0	0.4	0.5
Multiple directorships	2.3	2.4	1.1
Busy board	0	0.3	0.4
Executive and director incentives			
Proportion of variable CEO pay	0.90	0.77	0.29
Incentive pay for directors	1	0.9	0.3
Ownership structure (%)			
Independent blockholder ownership	6	9	16
Board ownership	10	20	23
Independent director ownership	0.1	1.2	3.1
CEO ownership	4	13	23
Firm characteristics			
Total revenues ($ bn)	0.9	6.5	14.6
Total assets ($ bn)	2.4	83.0	202.9
Leverage	0.2	0.8	1.2
Capital spending / revenues	0.02	0.03	0.02
Age	13.0	14.4	8.7
Number of segments	2.0	2.3	1.2
Firm performance			
Market capitalization ($ bn)	2.7	10.1	17.6
Tobin's Q	1.3	2.3	2.2
Operating cash flow ($ mn)	286	3,821	9,801
Net income ($ mn)	125	652	1,571
Return on assets	0.08	0.15	0.18
Return on equity	0.16	0.19	0.22

Considering all three mechanisms, the governance of securities firms does not look particularly strong. While executive and director incentives look fine, ownership structures hint at potential dominance by insiders and affiliates. As for the board, lack of classification is good, but its value is compromised by the high voting power of insiders (officers and directors may self-perpetuate). Monitoring strength of the board is also compromised with independent directors being in the minority. The overall picture might well be a result of the board sharing monitoring duties with clients and regulators in the case of financial firms, as suggested in the theory chapter.

Comparison with non-financial firms

In this section I compare my findings regarding financial-firm governance structure with those from governance research on non-financial firms. This is an incomplete effort for two reasons. First, my sample period is fairly recent, concluding in 2007. Due to the length of the publication cycle in economics and finance, it is hard to find studies using data that are less than five years old. Second, even for those articles analysing at least some overlapping time period, variable definitions and choices regarding what variables to report in summary statistics differ considerably. What follows is a best effort to overcome these obstacles.

Table 4.4 (Panel A) provides board size comparisons (all findings are sample means). Most findings cluster in the 9-10 directors range, both for my sample and reference research. Given that standard deviations are in the 2-4 range (not reported for clarity of presentation), board size does not seem to be an area where securities firms differ from non-financials.

Table 4.4 -- Comparisons with non-financial firms

Panel A - Board size

Study	Cai et al. 2009	Carter et al. 2010	Larcker et al. 2007	Lee & Carlson 2007	Hoitash & Hoitash 2009	Chhaochharia & Grinstein 2007
Period	2003-2005	1998-2002	2003	2003	2004	2000
Sample	2,488 obs. from ISS	2,563 obs. from S&P500	2,106 firms, major indices	S&P 500	1,751 firms from TCL	IRRC firms
Finding	9.14	11.2	8.78	11	9.29	9.71
My data	9.48	9.67	9.41	9.4	9.59	9.91

Study	Chhaochharia & Grinstein 2009	Chhaochharia & Grinstein 2009	Chhaochharia & Grinstein 2009	Chhaochharia & Grinstein 2009	Chhaochharia & Grinstein 2009	Chhaochharia & Grinstein 2009
Period	2000	2001	2002	2003	2004	2005
Sample	865 firms from S&P 1500	865 firms from S&P 1500	865 firms from S&P 1500	865 firms from S&P 1500	865 firms from S&P 1500	865 firms from S&P 1500
Finding	9.69	9.84	9.81	9.73	9.75	9.68
My data	9.91	9.69	9.59	9.41	9.59	9.44

The board independence comparison (Panel B) is quite interesting. Independent directorship figures in the literature (0.64-0.70) are quite different from my findings (0.40-0.45), but practically at the same level as my *outside* directorship findings (0.65-0.72). One possible interpretation is that previous research has undercounted grey directors, thereby overcounting independent ones (or I have done the opposite). An alternative interpretation is that we all have operationalized the independence construct correctly, and thus, securities firm boards have a much lower independence level. Without consulting the sources of other researchers, it is difficult to conclude which interpretation is closer to reality.

Table 4.4 -- Comparisons with non-financial firms

Panel B - Board independence

Study	Bhagat & Bolton 2008	Carter et al. 2010	Cai et al. 2009	Hoitash & Hoitash 2009	Jiraporn et al. 2009	Chhaochharia & Grinstein 2007
Period	2002	1998-2002	2003-2005	2004	1998-2003	2003
Sample	1,997 firms from IRRC	2,563 obs from S&P 500	2,488 obs. from ISS	1,751 firms from TCL	1,510 firms from IRRC	IRRC firms
Finding	0.64	0.69	0.70	0.68	0.67	0.69
My data (indep.)	0.40	0.42	0.45	0.45	0.42	0.42
My data (outside)	0.67	0.65	0.72	0.72	0.66	0.69

Board leadership comparisons (Panel C) suggest that in the early years of my sample there was a wedge between financials and non-financials, with financials having a higher rate of CEO/chair duality. Starting 2003, this wedge seems to disappear, so overall it is difficult to argue that there is a difference.

Table 4.4 -- Comparisons with non-financial firms

Panel C - Board leadership

Study	Bhagat & Bolton 2008	Carter et al. 2010	Larcker et al. 2007	Hoitash & Hoitash 2009	Chhaochharia & Grinstein 2007	Chhaochharia & Grinstein 2009
Period	2002	1998-2002	2003	2004	2003	2005
Sample	1,997 firms from IRRC	2,563 obs from S&P 500	2,106 firms, major indices	1,751 firms from TCL	IRRC firms	865 firms from S&P 1500
Finding	0.67	0.71	0.77	0.65	0.66	0.64
My data	0.81	0.78	0.66	0.59	0.66	0.66

Classification (Panel D) might be an area in which financial firms differ from non-financials. While there is some fluctuation across studies, about 60% firms in general have staggered boards. This is much less prevalent among securities firms, about 45% of the time. As classification has consistently been shown to hurt corporate performance, this seems to be an area where securities firm boards serve investors better.

Table 4.4 -- Comparisons with non-financial firms

Panel D - Board classification

Study	Larcker et al. 2007	Bebchuk & Cohen 2005	Bebchuk & Cohen 2005	Bates et al. 2008	Bates et al. 2008
Period	2003	2000	2002	2000	2002
Sample	2,106 firms, major indices	IRRC firms	IRRC firms	3,121 obs, IRRC firms	3,121 obs, IRRC firms
Finding	0.63	0.60	0.62	0.58	0.60
My data	0.44	0.47	0.44	0.47	0.44

Finally, in terms of the "busyness" of directors (Panel E), the picture is somewhat unclear. We have few studies to serve as reference points for non-financial firms, and they are inconsistent amongst themselves. If we ignore Chhaochharia & Grinstein 2007, there does not appear to be a difference between securities firms and non-financials: directors at firms of both types have around 2.3 board appointments on average.

Table 4.4 -- Comparisons with non-financial firms

Panel E - Multiple directorships

Study	Carter et al. 2010	Jiraporn et al. 2009	Chhaochharia & Grinstein 2007	Chhaochharia & Grinstein 2007
Period	1998-2002	1998-2003	2000	2003
Sample	2,563 obs from S&P 500	1,510 firms from IRRC	IRRC firms	IRRC firms
Finding	2.36	2.34	1.89	1.78
My data	2.37	2.35	2.63	2.28

Overall, out of the five major board dimensions we are considering, financial firms seem to differ from non-financials along two dimensions: board independence and board classification. The disparity in terms of board independence is not conclusive (there might be some measurement issues). Even

assuming the difference is accurate, prior research has not necessarily shown that higher independence goes with higher firm performance. In terms of board classification, however, the divergence between securities firms and non-financials is evident, suggesting better governance in the case of securities firms.

Bivariate analyses

It is fairly common in governance research (e.g., Varma 2003) to first consider a bivariate analysis of response variables before presenting the approach and results of the full-fledged multivariate analysis. Here I follow that convention.

On the basis of each major board characteristic, I split the full sample into two subsamples and compare corporate performance between the subsamples. For those characteristics that are measured by dummies (board leadership, classification, and director busyness), the splitting into subsamples is straightforward. One subsample consists of observations where the dummy equals one, and the other subsample contains the rest.

For board size, I split the sample into "large board" (those with above-average number of directors) and "small board". For board independence, I define "high independence" and "low independence" subsamples using the same approach. I also slice the sample based on whether independent directors constitute a majority on the board. Table 4.5 reports the results from tests of difference in means between subsamples for each board characteristic.

Board size (Panel A) seems to matter, with smaller boards associating with higher firm value and profitability (at rather high statistical significance). This is in line with both theory and evidence from general governance studies. Board independence results (Panel B) is also associated with corporate performance, but in the negative direction; higher independence is accompanied by lower value and profitability. Given this non-intuitive finding, I also analyze the sample based on whether the board is majority-independent. Again, an independent majority is associated with lower value and profitability, although the differences are economically less important and statistically insignificant.

Table 4.5 -- Bivariate results

Panel A - Board size

	Large board (n=135)	Small board (n=153)	t-statistic
Tobin's q	1.85	2.74	3.61 ***
Return on assets	0.12	0.17	2.28 **

Panel B - Board independence

	High independence (n=137)	Low independence (n=151)	t-statistic
Tobin's q	2.04	2.58	2.12 **
Return on assets	0.13	0.17	1.94 *

	Independent majority (n=106)	No independent majority (n=182)	t-statistic
Tobin's q	2.16	2.42	1.07
Return on assets	0.14	0.15	0.70

Panel C - Board leadership

	Duality (n=199)	No duality (n=89)	t-statistic
Tobin's q	2.30	2.38	0.28
Return on assets	0.15	0.14	0.46

Panel D - Classification

	Classified (n=120)	Not classified (n=168)	t-statistic
Tobin's q	2.17	2.43	0.99
Return on assets	0.11	0.17	2.95 ***

Panel E - Multiple directorships

	Busy (n=72)	Not busy (n=216)	t-statistic
Tobin's q	1.79	2.50	3.18 ***
Return on assets	0.11	0.16	2.03 **

t-statistics from two-sample tests of differences in means with unequal variances.

significance indicated at 1% (***), 5% (**), and 10% (*) levels.

Board leadership type (panel C) does not seem to be associated with firm value or profitability. Board classification (panel D) seems to matter for current profitability, where non-classified boards associate with higher ROA, but not for firm value. Finally, as suggested by theory and existing empirical literature, busy boards (panel E) appear to depress both firm valuation and profitability.

In summary, three board dimensions (size, independence, and busyness) seem to have a relationship with firm performance. While board size and busyness findings are theoretically expected, the suggested

independence-performance relationship is interesting. Whether other variables might be lurking behind these preliminary findings will be seen in the results of multivariate analysis.

Multiple regression results – Governance and firm value

Table 4.6 presents the results of OLS and GLS estimation of Tobin's Q. Column I (OLS) presents the results with fixed effects as explained above. Column II (GLS) further extends the model to account for potential auto-regression in error terms that might arise from the time-series nature of financial response data. In the latter case, I assume that the auto-regression coefficient (rho) is the same for all sample firms.

No board-characteristic coefficient turns out as statistically significant at conventional significance levels under GLS, and only board independence is significant under OLS. Signs are in the expected direction for board size, in the unexpected direction for board busyness, inconclusive for classification, and negative for board independence and dual leadership. In terms of economic importance, effect sizes range from -22% (board independence, OLS) to 6% (busyness, GLS) of average Tobin's Q, and cluster around -10% of average Tobin's Q. Overall, board governance does not seem to matter much to firm value in securities firms economically or statistically.

Among governance-related control variables, only share ownership by independent blockholders appears significant. Multiple firm-level covariates have significant associations with Tobin's Q. However, none of these are the focus of this research.

Multiple regression results – Governance and firm profitability

Table 4.7 presents the results of OLS and GLS estimations of ROA under specifications that vary slightly from Tobin's Q specifications. ROA itself is a regressor for Tobin's Q but it's the response variable here. Further, future growth opportunities are relevant to firm value but not current profitability, therefore the variable capturing them is also omitted.

Board size, independence, and busyness turn out as highly statistically significant under one specification but not the other; leadership and classification fail to obtain statistical significance at conventional levels. Signs are in the expected direction for board size, classification, and busyness, and negative for

independence and dual leadership. In terms of economic importance, we see somewhat more important results as compared with Tobin's Q results. Effect sizes range from -6% (classification, GLS) to -35% (independence, OLS) of average ROA, clustering roughly around -15% of average ROA. Overall, board governance seems to matter economically somewhat to profitability in securities firms, but not statistically, as measured by ROA. Board independence and board busyness coefficients turn up as statistically significant, and both with negative signs. While the effect of board busyness is in the theoretically expected direction, that on board independence is not. However, both effects disappear when allowing for AR(1). Instead, board size becomes the only board characteristic to statistically relate to profitability.

As is the case with Tobin's Q, some covariates seem to have a stronger statistical relationships with firm profitability than the governance dimensions we consider.

Finally, Table 4.8 presents the results of ROE estimations that have the same independent variables as the ROA equations. ROE results exhibit a pattern that is similar to ROA results. As both are just different measures of the same construct – profitability – such similarity is not surprising. Notable differences between ROE and ROA findings include the following: (1) Board busyness is not statistically significant under OLS or GLS for ROE, and (2) the sign on independence and classification are inconclusive for ROE. Estimated effect sizes are similar to the corresponding ones for the ROA analyses.

Summary of estimation results

Overall, board governance seems to matter to securities-firm performance only tangentially. Statistical significance for board characteristics is the exception. Board governance seems to indicate some economic importance for profitability, but not firm value, with the typical effect size being no more than 10% of the sample average of the response variable in question.

In governance research without any particular industry focus, evidence about the performance effects of board independence and dual leadership is also inconclusive. Therefore, failing to detect a performance effect for securities firms for these constructs is not surprising.

Table 4.6 -- Results of Tobin's Q estimations

		I	II
		OLS	GLS
Board characteristics	Board size	-0.045	-0.029
		(0.046)	(0.057)
	Proportion of independent directors	-2.392 **	-0.797
		(0.938)	(1.122)
	Proportion of grey directors	-1.032	0.584
		(1.011)	(1.181)
	CEO/chair duality	-0.256	-0.254
		(0.245)	(0.259)
	Classification	0.024	-0.193
		(0.408)	(0.444)
	Busy board	0.135	0.142
		(0.223)	(0.232)
Executive and director incentives	Proportion of variable CEO pay	0.351	0.195
		(0.571)	(0.550)
	Incentive pay for directors	0.001	-0.553
		(0.309)	(0.347)
Ownership structure	Independent blockholders	0.031 **	0.039 ***
		(0.013)	(0.012)
	Independent directors	-0.058	-0.034
		(0.035)	(0.036)
	CEO	0.010	0.019
		(0.019)	(0.020)
Firm characteristics	Return on assets	8.117 ***	8.105 ***
		(0.821)	(0.997)
	Log of total revenues	-0.239	-0.394 **
		(0.175)	(0.196)
	Leverage	-0.027	-0.043
		(0.141)	(0.158)
	Capital spending / revenues	7.078 *	9.803 *
		(4.292)	(5.116)
	Age	0.030	-0.005
		(0.047)	(0.067)
	Number of segments	0.197	-0.708 *
		(0.283)	(0.366)
Rho		-	0.299
Intercept		2.834	2.592
Observations		288	256
R-squared		0.60	0.45

Standard errors in parentheses.

Significance indicated at 1% (***), 5% (**), and 10% (*) levels.

Table 4.7 -- Results of ROA estimations

		I	II
		OLS	GLS
Board characteristics	Board size	-0.006	-0.010 **
		(0.004)	(0.004)
	Proportion of independent directors	-0.253 ***	-0.087
		(0.073)	(0.079)
	Proportion of grey directors	-0.131	-0.087
		(0.080)	(0.083)
	CEO/chair duality	-0.028	-0.020
		(0.019)	(0.017)
	Classification	-0.010	-0.009
		(0.032)	(0.032)
	Busy board	-0.036 **	-0.024
		(0.017)	(0.015)
Executive and director incentives	Proportion of variable CEO pay	0.192 ***	0.058 *
		(0.043)	(0.034)
	Incentive pay for directors	0.001	-0.028
		(0.024)	(0.022)
Ownership structure	Independent blockholders	0.001	0.002 **
		(0.001)	(0.001)
	Independent directors	0.003	0.000
		(0.003)	(0.002)
	CEO	0.001	0.000
		(0.001)	(0.001)
Firm characteristics	Log of total revenues	0.056 ***	0.079 ***
		(0.013)	(0.014)
	Leverage	-0.008	-0.003
		(0.011)	(0.011)
	Age	-0.013 ***	-0.003
		(0.004)	(0.008)
	Number of segments	-0.061 ***	-0.063 **
		(0.021)	(0.025)
Rho		-	0.636
Intercept		0.189	-0.104
Observations		288	256
R-squared		0.11	0.10

Standard errors in parentheses.

Significance indicated at 1% (***), 5% (**), and 10% (*) levels.

Table 4.8 -- Results of ROE estimations

		I	II
		OLS	GLS
Board characteristics	Board size	-0.009	-0.018 ***
		(0.006)	(0.007)
	Proportion of independent directors	-0.350 ***	0.024
		(0.110)	(0.132)
	Proportion of grey directors	-0.431 ***	-0.210
		(0.120)	(0.139)
	CEO/chair duality	-0.008	-0.009
		(0.029)	(0.029)
	Classification	0.014	-0.057
		(0.049)	(0.052)
	Busy board	-0.014	-0.035
		(0.027)	(0.025)
Executive and director incentives	Proportion of variable CEO pay	0.257 ***	0.083
		(0.065)	(0.058)
	Incentive pay for directors	-0.070 *	-0.072 *
		(0.036)	(0.038)
Ownership structure	Independent blockholders	0.000	-0.001
		(0.001)	(0.001)
	Independent directors	0.000	0.003
		(0.004)	(0.004)
	CEO	-0.001	-0.001
		(0.002)	(0.002)
Firm characteristics	Log of total revenues	0.112 ***	0.130 ***
		(0.020)	(0.022)
	Leverage	0.055 ***	0.006
		(0.017)	(0.018)
	Age	-0.028 ***	-0.017
		(0.006)	(0.011)
	Number of segments	-0.074 **	-0.045
		(0.033)	(0.041)
Rho		-	0.544
Intercept		0.204	-0.136
Observations		288	256
R-squared		0.10	0.10

Standard errors in parentheses.

Significance indicated at 1% (***), 5% (**), and 10% (*) levels.

However, in prior research board classification and board busyness have been found to negatively affect firm performance. Lack of sensitivity of both firm value and profitability to these two characteristics, in addition to a small to moderate effect size for board size, might well indicate that securities-firm performance is indeed less sensitive to board governance than non-financial firms.

A preliminary extension into board expertise

Prior research is typically silent when it comes to explaining findings that fail to confirm the theoretical expectation that director independence is inherently a good thing and should imply better monitoring and therefore improve firm performance. This study, similar to many others, finds either a negative coefficient on level of board independence (FE specification) or no effect (FE plus AR(1) specification). Here I would like to explicitly argue that independence might be a necessary condition but is not a sufficient condition for successful monitoring. To the typical corporation, the vast majority of people on earth are outsiders. However, a small portion of people are in a position to understand how complex corporations work and as a result, advise or monitor an executive team. In other words, a director needs to have some level of expertise in corporate affairs, the industry in question, or both.

In fact, if expertise is orthogonal to being an outsider to a corporation, then estimates of the coefficient on director independence will be biased in the negative direction when expertise is not included among the regressors. Formally, let $y = x\beta + \varepsilon$ be the typical specification where y is performance, x is board independence, and β is estimated as negative. Consider that the actual mechanism at work is according to $y = x\beta + z\delta + \varepsilon$ where z is board expertise. Now, if $\delta > 0$ and $cov(x, z) < 0$, then an estimate of β resulting from the former equation will have a negative bias.

Looking at the first condition of the "if" statement just above, expertise in the business should come with better monitoring ability since the director would be in a better position to evaluate what the CEO is proposing. As for the second condition, it just makes sense that outsiders know less about the business than insiders. As a result, the typical finding regarding independence in governance literature might be suffering from a negative bias due to the omission of an expertise variable.

To see whether this actually matters in my sample, I code director expertise from director profiles provided in proxy statements. I define an independent director as an expert in the securities business if he

or she: (a) is or has been an executive of the firm, (b) is or has been in the top management of other securities firms, or (c) is a finance professor. I find that about 60% of directors are experts (Table 4.9).

Table 4.9 -- Board expertise

	Median	Mean	St. Dev.
Proportion of expert directors	0.63	0.60	0.22

I run firm value and profitability regressions with this additional variable. The results, however, are qualitatively and quantitatively very similar to results from prior regressions, and the expertise variable is not statistically significant. While a negative correlation between board expertise and independence is confirmed (-0.32), expertise does not seem to influence performance, at least in this particular sample.

CHAPTER 5: DISCUSSION AND CONCLUSIONS

In this work, I argued that an important characteristic of the economics of the financial firm is the existence of a second principal-agent relationship. In addition to the traditional agency between stockholders and managers, the financial firm embodies a second agency between its clients and management. While the exact nature of this second agency might differ across financial firm types (e.g., banks vs. insurance companies), its essence is the same across the board. Namely, the manager is tasked with both maximizing shareholder value and creating a positive return on client funds (deposits, policy premiums, etc.). Actually, the manager creates a profit for the stockholder *by means of* creating value for clients. Thus, the incentives of managers in financial firms are shaped not only by contracts between them and stockholders, but also by their relationships with clients. In particular, as clients are principals to the financial-firm manager, they will monitor his actions.

Further, unlike the typical manufacturing firm, the typical financial firm is subject to extensive regulation – by federal authorities, state authorities, and in some cases self-regulatory organizations. Regulation imposes floors and caps on the manager's actions. Regulation also supplies another layer of monitoring of managerial actions, in addition to those provided by stockholders and clients. If the nature of the financial firm with another principal and regulatory oversight provides for a better alignment of manager and stockholder interests, then there would be smaller role for board governance in such firms. In particular, corporate performance might be less sensitive to board oversight in financial firms compared with non-financial ones (where stockholders cannot rely on regulator or client monitoring).

Analysis of the data I collected in part confirms and in part fails to confirm these predictions. In terms of the descriptive analysis of board characteristics, securities firm and non-financial firm boards look alike except for board independence and classification. While securities firms seem to have fewer independent directors, in theory implying weaker monitoring, their boards exhibit less classification, implying more accountable boards. In terms of the estimates of performance effects of board characteristics, the picture is different. Only board independence, and to a lesser extent, board size, seem to matter to securities firm performance economically, but without consistent statistical significance. This contrasts with strong negative performance effects of board size, classification and board busyness in the case of non-financial firms. These suggest that financial-firm performance might indeed be less sensitive to board governance. On the whole, however, my results display the same pattern of ambiguity and inconclusiveness that has characterized much of the research in corporate governance.

A major limitation of this study is that I cannot formally establish a causal relationship between governance variables and response variables. However, given that only one board characteristic seems to have a statistically significant relationship with performance, this limitation becomes a minor issue. Another potential limitation is the sample size. While sample sizes in the order of hundreds are not uncommon in governance research, lack of significance on some explanatory variables might be an artifact of using a fairly small sample. Further, my findings (or lack of findings) might follow from specification error. One consolation in this regard is that I usually follow the literature in terms of variable definitions and model specifications. Moreover, the measurement of most variables in this study relies on values reported by corporations and are not independently verified. This might lead to an unknown amount of self-reporting bias (which all governance research is subject to).

At a broader level, the way financial firm managers behave and the extent of monitoring and pressure they are subjected to from clients might differ before and after the "great recession" that started in 2008, just after my data collection period ends. Clients, through the market mechanism, might have been a sharp "regulator" of managerial behavior due to relative ease with which clients could punish managers by moving their assets from underperforming to outperforming firms. In such a situation, governing boards might not matter much indeed. In a crisis environment, however, markets and clients might fail to provide the discipline described, and boards of directors might have acquired new and greater importance for oversight of management after 2007.

At a post-crisis time, in the wake of some major financial legislation (Frank-Dodd Act of 2010), my findings should attract the attention of policy makers. SEC, Congress, and stock exchanges have

previously targeted higher board independence as a solution to mismanagement problems in the context of all public firms. The findings of this study suggest no link between board independence and performance in the very context of securities firms. Further, mutiple other board characteristics that matter in non-financial firms don't seem to have an effect for securities firms. My findings constitute yet another call to lawmakers and regulators to realize that board independence, or any other easily measurable board characteristic for that matter, cannot be expected to serve as a quick solution.

This study also contributes to governance literature in multiple ways. To the best of my knowledge, this is the first study to quantitatively describe board governance and assess board structure - performance relationships in the context of securities firms. This fills a major gap in the still nascent literature on governance in the financial sector, the importance of which has been realized in the current crisis. I also advance the literature by more accurately measuring board characteristics, looking at the entirety of a given year instead of a one-day snapshot. My study also adds to the large body of empirical evidence from governance research in general which suggests that board independence does not help with corporate performance despite substantial theoretical appeal.

Avenues for future research exist in terms of trying to understand why independence does not help in practice and coming up with characteristics that do help. In particular, research could try to identify director attributes that should theoretically improve a director's ability to understand the affairs of complex corporations and monitor CEO activity, such as having top management experience or possessing expertise in the business of the firm. My initial foray into exploring the effect of sectoral expertise did not yield a result; however, that might be particular to this sample. Another line of research could focus on situations where independence has created better results for shareholders, in financial and non-financial firms alike, and seek to detect common denominators of those situations. In either case, research will need to delve deeper into corporate data – more than what's available from standard financial databases.

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