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THREE ESSAYS ON CORPORATE BOARDS

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Doctor of Philosophy

Business

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THREE ESSAYS ON CORPORATE BOARDS

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An abstract of a dissertation submitted
to the Faculty of the Graduate School of Emory University
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Business

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Abstract

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My purpose is to examine the composition and structure of corporate boards, and their implications for firm performance and monitoring and disciplinary effectiveness. In my first essay, I explore the nature and extent of financially affiliated directors' involvement within the board. I find that affiliated directors are given substantially greater committee involvement when the CEO is directly involved in apportioning committee assignments, and their involvement is negatively associated with firm value and subsequent operating performance. In my second essay, I examine how social ties affect a director's capacity to objectively monitor and discipline the CEO. I find that CEOs enjoy higher compensation packages that are less sensitive to performance when they share social ties with members of the board. In my third essay, I examine how social ties affect the financial-reporting process, as well as how firms respond to increased regulatory constraints concerning board and committee composition. I find that social ties between the CEO and members of the audit committee contribute to higher levels of earnings management. Moreover, I find that audit committees appointing socially affiliated replacements (for the departing conventionally affiliated members) in the post Sarbanes Oxley period manage earnings more than those that do not, suggesting the growing importance of social ties as an alternate, unregulated attempt by which CEOs capture the financial reporting process.

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Introduction

Boards of directors play a crucial role in governing their firms. They oversee investments, capital structure decisions, and dividend payouts. They also hire and fire the CEO, determine executive compensation, and oversee the financial reporting process. Ideally, boards act on behalf of shareholders, advising the CEO and intervening when necessary. However, directors themselves are not perfect agents. For instance, an insider's career concerns and proximity to the CEO make it difficult to remain objective or independent minded, and similarly, independence concerns arise when a director is a relative of the CEO or has some form of business or financial tie to the firm.

To curb potential abuses, regulatory agencies have imposed restrictions on board and committee composition, requiring that a majority of board members have neither financial nor familial ties to the CEO or to the firm and disallowing non-independent director participation in the Audit, Compensation, and Governance/Nominating committees. However, this lack of flexibility could constrain firms from efficient outcomes, since there may be net benefits to the use of non-independent directors on the board. Furthermore, from a monitoring standpoint, the broad notion of director independence is difficult to definitively specify, and many other factors likely affect a director's objectivity in evaluating and disciplining the CEO. My purpose is to explore whether there are net benefits of non-independent directors, what factors (apart from financial or familial ties) affect a director's independent-mindedness, and how firms respond to increased regulatory constraints on board and committee structure.

In my first essay ("Affiliated Directors: Advisors or Rubber Stamps?"), I use detailed data on board committees (collected from proxy statements) to explore the

possible advisory role of affiliated directors. I find that affiliated directors are given substantially greater committee involvement when the CEO is directly involved in apportioning committee assignments; their higher involvement is reflected not only in the potential advisory committees, but also in the Audit and Compensation Committees, which predominantly entail monitoring and disciplinary functions. Moreover, affiliated directors' committee involvement is substantially and negatively associated with firm value and subsequent operating performance, and a negative shock to the CEO's control over committee assignments is marked by a decrease in affiliated directors' committee presence. Overall, my results do not support economic or expertise-based stories of board assignments. Rather, they suggest that these affiliated directors allow the CEO to avoid opposition, and that the CEO opportunistically endows these directors with more involvement and control over board activities when he is in the position to do so.

In my second essay ("It Pays to Have Friends," joint work with Byoung-Hyoun Hwang), I explore social ties as a potential source of a director's dependence to the CEO. Actors are not driven solely by economic gains, and board consultants in the popular press have broached this issue, saying that when directors debate whether or how to fire a CEO, "they typically need the most help in dealing with their attachment to the CEO" (Business Week, 2007). Using a unique dataset, we measure social ties through similarities in characteristics and experiences, and we find that CEOs enjoy compensation packages that are higher and less sensitive to performance when they share social ties with members of the board. Moreover, CEO turnover is less sensitive to performance when there are social ties between directors and the CEO. Our findings suggest that social ties affect how directors evaluate and discipline the CEO, and that consequently, a

considerable percentage of boards currently classified as "independent" are substantively not.

Finally, in my third essay ("Earnings Management and Social Ties," joint work with Byoung-Hyoun Hwang), I explore how these social ties between directors and CEOs affect the financial-reporting process and how firms respond to increased regulatory constraints concerning board and committee members. We find that measures of social ties between the CEO and members of the audit committee are associated with higher levels of earnings management, and we provide evidence that these ties contribute to higher CEO bonuses, indicating one channel through which CEOs (tangibly) benefit from social ties with committee members. Furthermore, we find that the stricter independence criteria imposed in the post Sarbanes Oxley period is accompanied by a replacement of conventionally affiliated directors with socially affiliated ones. Those firms appointing socially affiliated replacements manage earnings more in the post Sarbanes Oxley period than those that do not, suggesting the growing importance of social ties as an alternate, unregulated attempt by which CEOs capture the financial reporting process.

First Essay: Affiliated Directors: Advisors or Rubber Stamps?

1. Introduction

With tightened regulatory constraints on board composition, a natural question arises as to whether this lack of flexibility constrains firms from efficient outcomes. Firms face a potential tradeoff in selecting board members, since the best monitors may not be the best advisors. Although research has identified inside or otherwise affiliated directors associated with weaker monitoring and disciplinary outcomes,[1] a greater representation of these affiliated directors does not systematically extend to lower corporate value or performance (Bhagat and Black, 2002; Hermalin and Weisbach, 2003). This lack of association has brought forth hypotheses of an offsetting advisory role of these directors who are less effective as monitors (Raheja, 2005; Adams and Ferreira, 2007; Harris and Raviv, 2008). My purpose is to explore the purported advisory role of affiliated directors by examining when and how these directors are assigned to various duties on the board.

Specifically, I use detailed data on board committees (collected from proxy statements) to get a closer look at the nature and extent of each director's involvement in board activities. Directors are not equally involved in guiding or monitoring the CEO, and according to practitioners, most of the board's work is done in specialized committees (Lorsch and MacIver, 1989; Adams, 2000). Aside from regulatory constraints barring insiders from certain roles on the board, little is known about what determines who is endowed with greater decision-making involvement. Is it a matching of directors'

[1] Examples include Weisbach (1988), Byrd and Hickman (1992), Brickley, Coles, and Terry (1994), Cotter, Shivdasani, and Zenner (1997), Mayers, Shivdasani, and Smith (1997), and Paul (2007).

expertise to the needs of the firm, or is it the CEO's desire to keep his decisions unchecked?

Overall, the results suggest that, on average, directors with financial or familial ties are not employed in an advisory capacity but rather to serve in the interests of the CEO. On average, affiliated directors are involved in 30% of the board's committees when the CEO is directly involved in apportioning committee assignments, as opposed to 19% of committees when he is not. This difference persists even accounting for industry- and firm-specific conditions which may alter the economic needs of the firm.

Aside from opportunism, one possibility is that the CEO is better aware of the expertise and advisory value of these affiliated directors. However, their higher involvement is reflected not only in the potential advisory committees, but also in the predominantly monitoring committees. For instance, 21% of Audit Committee members are affiliated directors when the CEO is directly involved as opposed to 8% when he is not, and 12% of Compensation Committee members are affiliated directors when the CEO is involved as opposed to 5% when he is not.

Furthermore, although the presence of affiliated directors per se is not systematically associated with firm performance (Bhagat and Black, 2002; Hermalin and Weisbach, 2003), I find that the extent of their committee involvement is substantially and negatively associated with both firm value and subsequent operating performance. Affiliated directors tend not to be very involved. For instance, almost half of all insiders are not involved in any committees, and the median board's average insider committee involvement is 15% (however, there is a wide range in their average involvement, which can be as high as 75%). In the extreme case that none of the board's affiliated directors

have any decision-making involvement, then it is irrelevant whether they comprise a small or large fraction of the board. Thus, focusing on the actual involvement of these directors (rather than just their presence on the board), increases the power of tests examining their relation with firm performance.

Finally, I examine how firms respond to regulatory changes in the 2002-2003 time period, which forced an exogenous shock on the CEO's control over apportioning committee assignments. If affiliated directors are employed as expert advisors rather than rubber stamps, then a negative shock to the CEO's control should not alter their use in this capacity. To the contrary, I find that the CEO's mandated exclusion (from apportioning committee assignments) is marked by a decrease in the presence of affiliated directors on committees with a potential advisory component, such as the Finance and Executive Committees.

Collectively, the evidence is inconsistent with economic or expertise-based stories of board assignments. Rather, it suggests that these affiliated directors allow the CEO to avoid opposition, and the CEO endows these directors with more involvement and control over board activities when he is in the position to do so.

This paper is organized as follows. In Section 2, I develop my hypotheses; in Section 3, I describe my data sources, and I discuss my main measures; in Section 4, I present summary statistics on board committees and director involvement (and determinants thereof); in Section 5, I examine how committee composition and directors' involvement differ when the CEO is directly involved as opposed to when he is not, and the corresponding implications for firm value and performance; in Section 6, I discuss and conclude.

2. Motivation and hypotheses

If affiliated directors bring specialized skills or expertise to the firm that independent outsiders cannot, then firms face a tradeoff between their advisory versus monitoring needs in determining the optimal composition of their boards. For instance, an insider's career concerns and proximity to the CEO make it difficult to remain objective or independent minded, but this agency pitfall is possibly offset by the inside knowledge and specialized advice insiders might bring to the board. Similarly, a provider of financial services to the firm may fulfill an advisory role that counters the independence concerns arising from his business relationship with the firm, and in general, management may be more willing to share information with those directors who are less likely to discipline or monitor them. However, given the inherent agency problems when control is separated from ownership (Fama and Jensen, 1983), there is no guarantee that affiliated directors are appointed for or used in an advisory capacity.

To test these competing explanations, I examine affiliated directors' involvement in the board's committees. Directors are not equally involved in making decisions that guide and monitor the activities of the firm, and according to practitioners, most of the board's work is done in specialized committees that meet separately to discuss and decide various issues (Lorsch and MacIver, 1989; Adams, 2000). Thus, a director who is a member of the board's Audit, Finance, and Executive Committees is in a greater position to monitor and advise the CEO than a director who is not involved in any committees. If affiliated directors are being used for advisory purposes, then controlling for industry- and firm-specific economic conditions which could affect the advisory needs of the firm,

their participation in the board's committees should be invariant to the CEO's control over committee assignments.

Nonetheless, it may be the case that the CEO is better aware of the expert advice that these affiliated directors provide. Still yet, the CEO's direct involvement in apportioning committee assignments may be associated with a greater advisory need not adequately captured by general industry and firm characteristics. Thus, I also examine individual committee compositions. If the CEO is acting in shareholders' interests, then (irrespective of the firm's advisory needs) he should not endow affiliated directors with membership in committees such as the Audit and Compensation Committees, which entail monitoring and disciplinary functions. Furthermore, I examine the association between firm performance and the extent of these affiliated directors' involvement in the board's committees. If it is the case that affiliated directors have an advisory value recognized only by select boards, then there should be a positive relation (or no relation, if their advisory value exactly offsets their monitoring deficiency) between firm performance and the extent of these directors' committee involvement.

Finally, I examine the changes in affiliated directors' committee involvement with respect to the regulatory changes surrounding 2003. In August 2002, the New York Stock Exchange filed amendments with the Securities and Exchange Commission, proposing new listing standards with regard to corporate governance practices. In particular, membership restrictions were placed on the Governance Committee, thereby disallowing the CEO's involvement in apportioning committee assignments. If affiliated directors were being used as expert advisors rather than rubber stamps, then an exogenous shock to the CEO's control over committee assignments should not alter their use in this capacity.

Although additional independence criteria were imposed on the Audit, Compensation, and Governance/Nominating Committees during this time, the other committees remained free from regulatory constraints. Thus, if affiliated directors were fulfilling an advisory need, there should not be a decrease in the presence of affiliated directors on non-regulated committees (e.g., the Finance and Social Responsibility Committees) attributed to this shock.

3. Data description and discussion of measures

In this section, I describe my data sources and regression variables. I also present summary statistics on board committees and director involvement, and determinants thereof.

A. Sources

I focus on the Fortune 100 firms (as declared in 1996), and my sample period spans 1996 to 2006, which was determined by the availability of the Investor Responsibility Research Center (IRRC) Directors database. For each firm-year, I collect each director's committee-involvement information from annual proxy statements (and occasionally, 10K's), which I obtain from the Thomson ONE Banker database. I use committee descriptions to assign a uniform naming convention, because committee names vary across firm-years. For example, the titles "Corporate Governance" and "Nominating" are used interchangeably, and alternative names for this committee include "Board Organization", "Organization Review", "Policy and Organization", and "Director

Affairs". Finally, I obtain financial-statement and stock-price data from the Compustat and CRSP databases, respectively.

Of the Fortune 100 firms, three are not publicly-traded and an additional four do not have sufficient financial or governance data. My final sample consists of 812 firm-years, with 10,317 director-firm-years and 4,198 committee-firm-years.

B. Inside, gray outside, and independent directors

I partition directors into three basic categories: insiders, gray outsiders, and independent directors. A director is an *insider* if he is a current employee of the firm. A director is a *gray outsider* if he is a former employee of the firm (or a subsidiary thereof), a relative of an executive officer, a customer of or a supplier to the company, a provider of professional services, a recipient of charitable funds, a designee under a documented agreement by a significant shareholder or group, or interlocked with an executive of the firm.[2] An interlocking directorate, also known as board cooptation, is a situation in which an executive of firm X is a director at firm Y at the same time that an executive of firm Y is a director at firm X. This list of potential affiliations also includes a catchall phrase for any other type of affiliation that poses a potential conflict of interest, because there are a myriad of possibilities that cannot be definitively specified. However, the scope of this catchall is limited to proxy disclosures, and firms are not inclined to report beyond what is explicitly required. Insiders and gray outsiders are often grouped into one class known

[2] Details are available at http://wrds.wharton.upenn.edu/support/docs/irrc/directors_terms.doc. Listing standards filed with the SEC specify similar restrictions for director independence, with the exception of interlocked directors, who, though indicative of poor governance (Hallock, 1997), are not included in the formal independence criteria set forth by the NYSE.

as *affiliated* directors. Finally, a director is *independent* if he is neither an insider nor a gray outsider.

In terms of membership constraints (summarized in Appendix A), insiders were restricted from the Audit and Compensation Committees,[3] and by 2003, they were also restricted from the Governance/Nominating Committee. On the other hand, gray outsiders had unrestricted access to all committees until the enactment of Sarbanes-Oxley in 2002, at which point they were restricted from the Audit Committee,[4] and in 2003, they were also restricted from the Compensation and Governance/Nominating Committees. In contrast to insiders and gray outsiders, independent directors have unrestricted access to all committees throughout the entire sample period.

C. Committees

Firms have a wide range of committees, which I partition into two broad categories: those committees with regulation governing their existence and composition (i.e., who is or is not allowed to participate) and those committees without. Each board committee has its own charter detailing its objectives, roles, and responsibilities, of which I provide a brief description below. Please refer to Appendix B for a more detailed account of each committee.

[3] Some firm-years may have non-zero values with regard to the incidence of insiders on the Compensation Committee, because there are certain compensation-related committees, such as the Compensation Administration Committee, which are grouped together with the Compensation Committee.

[4] In 1999, the NYSE proposed amendments to listing standards, specifying that audit committees be composed entirely of independent directors. However, the independence criteria were laxer than post-SOX standards, allowing some gray outsiders to remain on the Audit Committee.

Regulated committees. This group consists of the Audit and Compensation Committees, and is later joined by the Governance/Nominating Committee in 2003. Among other duties, the Audit Committee is responsible for appointing independent auditors, reviewing audit reports, and ensuring proper internal controls as well as compliance with ethical and legal standards; the Compensation Committee is responsible for reviewing and approving compensation arrangements and performance criteria for officers of the firm, and occasionally oversees management succession; and the Governance/Nominating Committee is responsible for determining the duties and memberships of the board's committees, recommending practices to evaluate the contributions of individual board members, and considering nominees to fill board vacancies.

Unregulated committees. This group consists of the remaining committees of the board. Here, I focus on the more frequently occurring, standing committees of the board, which are the Finance, Social Responsibility, Executive, Pension Management, and Science and Technology Committees (and up until 2003, the Governance/Nominating Committee). Examples of the remaining committees include Acquisitions, Classified Business Review, and Legal Compliance Committees. Among other duties, the Finance Committee oversees the firm's capital needs, dividend policy, equity and debt issuances, and large capital expenditures; the Social Responsibility Committee oversees matters affecting the firm's reputation, such as charitable contributions, environmental policy, and other such issues where there is public interest in the firm's affairs; the Executive Committee has the authority to convene and make decisions in place of the full board (as permitted by state law) during the intervals between board meetings; the Pension

Management Committee establishes and reviews funding strategies, performance, and investment policy of funds invested for retirement plans; and the Science and Technology Committee is responsible for reviewing and advising the board on the firm's strategic direction and investment in research and development and technology.

D. Discussion of measures

Provided below are descriptions of my main measures. Regression-specific variables are discussed throughout the paper, as necessary. Please refer to Appendix C for a comprehensive list of regression variables and definitions.

D.1. CEO involvement in apportioning committee assignments

I define the CEO's direct involvement, *CEO Involved*, by whether he is a member of the Governance Committee, which, according to committee charters, is responsible for determining committee compositions. If the board does not have a Governance Committee, then the entire board, including the CEO, is automatically involved in committee assignments.

D.2. Directors' committee involvement and committee representation

For each firm-year, I calculate the average committee involvements of inside, gray outside, and independent directors, where an individual director's committee involvement refers to the proportion of the board's committees of which he is a member.

D.3. Need for specialized/firm-specific advice

Affiliated directors' committee involvement may reflect a firm's economic needs rather than poor governance. To control for these possible needs, I use the following firm-specific ($log(Assets_{i,t-1})$, $log(Firm\ Age_{i,t})$, $Leverage_{i,t-1}$, $ROA_{i,t-1}$, $\sigma^2_{i,t-1}$, $Diverse_{i,t-1}$, $CAPEX/Assets_{i,t-1}$, $R\&D/Sales_{i,t-1}$) as well as industry-specific ($Herfindahl\ Index_{i,t-1}$, $Industry\ Homogeneity_{i,t-1}$) characteristics.

A firm's size, age, and diversification characterize its complexity in terms of organization, finances, and scope of operations, which may require boards to seek directors from outside sources (Coles, Daniel, and Naveen, 2008; Linck, Netter, and Yang, 2008). On the other hand, greater stock-return volatility, capital expenditures, and research-and-development intensity, suggest a need for more inside director involvement, because they characterize a firm's complexity in terms of information asymmetry and a need for more specialized, firm-specific knowledge (Linck, Netter, and Yang, 2008; Raheja, 2005). Levered firms depend more on outside resources (Coles, Daniel, and Naveen, 2008), and thus, may accrue greater benefits from involving financially affiliated outsiders. For instance, bankers on corporate boards provide access to financing (Guner, Malmendier, and Tate, 2005).

Another possibility is that affiliated directors provide the best direction and guidance for the firms that suffer poor performance or are in a distressed industry. If this is the case, then highly levered firms should increase their affiliated directors' committee involvement during an industry downturn.[5] Likewise, then past performance should be negatively associated with affiliated directors' committee involvement. On the other

[5] Following Opler and Titman (1994), I define a distressed industry whether median sales are negative and median stock returns are less than 30%.

hand, past performance may be a governance determinant (rather than an economic one), since strong prior performance increases the CEO's clout with the board (Hermalin and Weisbach, 1998).

Firms in less homogeneous industries may have more difficulty in finding a replacement CEO (Parrino, 1997); likewise, such firms may have more difficulty in finding suitable board members from outside of the firm.[6] With regard to industry dummies, I use the Fama-French (1997) five-industry classification (finer classifications result in much sparser partitions, with many categories having only one or two firms), and I obtain very similar results whether I use the ten- or 12-industry classifications.[7]

In Appendix D, I present a summary of these potential economic determinants of a firm's need for insider or specialized advice and their expected relations with affiliated directors' committee involvement and presence on board committees.

4. CEO, committee, board, and firm characteristics

In this section, I present summary statistics on board committees, the CEO's involvement in apportioning committee assignments, and determinants thereof.

[6] In this regard, a firm's similarity to its industry is likely more important than the overall homogeneity of the industry. Thus, I also estimate my regressions using a firm-specific measure of its industry similarity (i.e., the partial correlation between firm and equal-weighted industry returns accounting for equal-weighted market returns, rather than the industry average of these partial correlations).

[7] Obtained from Ken French's website: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

A. Board composition and average committee involvement

In Table 1, I present summary statistics on the average board representation of various types of directors as well as their average committee involvement, where a director's committee involvement refers to the proportion of the board's committees of which he is a member. To calculate the average board representation of, say, inside directors, I first calculate for each firm-year the proportion of directors who are insiders. Then, I take the pooled mean of these proportions. Similarly, I calculate average committee involvements by first calculating for each firm-year the average committee involvement of various director types, and then taking the pooled mean of these averages.

On average, directors are involved in 38% of their boards' committees, and 13% of directors are not involved in any committees. Overall, independent directors have the greatest board representation as well as committee involvement, which is, in part, a reflection of the regulatory constraints on affiliated directors' board and committee memberships.[8] On average, 72% of directors are independent outsiders and these independent directors are involved in 45% of their board's committees. 17% of directors are insiders and the remaining 11% are gray outsiders, with average committee involvements of 15% and 23%, respectively.

B. Board/firm characteristics and determinants of CEO involvement

In Table 2, I present summary statistics on various CEO, board, and firm characteristics. In 13% of firm-years, the CEO is directly involved in apportioning committee

[8] Nonetheless, independent directors have greater presence and participation in committees for which there are no membership restrictions (roughly 40% of a board's committees have no membership restrictions throughout my entire sample period).

assignments, and in 81% of firm-years, the CEO doubles as chairman of the board. The average board in my sample has 12.6 members, 5.2 committees, and holds 8.7 meetings annually. 9% of the firms are family firms, wherein a single family controls the firm's ownership and is active in top management. Of these, 46% have family CEOs (i.e., the CEO is a member of the controlling family), and 9% have a founder serving as either CEO or chairman (untabulated).

I now explore the factors contributing to the CEO's involvement in apportioning committee assignments. On one hand, if CEOs are better able (than other members of the board) to assign positions to directors based on specific advisory needs of the firm, then firm and industry specific factors characterizing these specialized needs (e.g., firms operating in multiple business segments or in less homogeneous industries) should be associated with a firm's propensity to allow the CEO control over directors' assignments. Alternatively, if CEOs desire control over directors' roles and decision-making involvement to keep his decisions unchecked, then measures of his clout or power within the board should be associated with a higher propensity to secure a position in this process.

Thus, I estimate a binary response model of the *CEO involved* indicator on a $PostReg_{i,t}$ indicator and various CEO characteristics (*Family CEO*$_{i,t}$, *CEO Tenure*$_{i,t}$, *CEO is Chair*$_{i,t}$, *CEO Pay Slice*$_{i,t}$), board and firm-specific governance characteristics (*Entrenchment Index*$_{i,t}$, *DE Incorporated*$_{i,t}$), firm characteristics (*log(Assets*$_{i,t-1}$*)*, *log(Firm Age*$_{i,t}$*)*, *Leverage*$_{i,t-1}$, *ROA*$_{i,t-1}$, $\sigma^2_{i,t-1}$, *Diverse*$_{i,t-1}$, *CAPEX/Assets*$_{i,t-1}$, *R&D/Sales*$_{i,t-1}$), and either industry characteristics (*Herfindahl Index*$_{i,t-1}$, *Industry Homogeneity*$_{i,t-1}$, *Industry Downturn*$_{i,t-1}$, *Industry Downturn*$_{i,t-1}$ × *Leverage*$_{i,t-1}$) or industry dummies. The CEO and

firm-specific governance characteristics are variables that have been identified to indicate the CEO's power or control over the board. For instance, a family CEO (i.e., a CEO who is a member of the controlling family) likely has more sway over members of the board, and when the CEO doubles as chairman of the board (often referred to as CEO duality), the board may be easier for him to control (Yermack, 1996; Core, Holthausen, and Larcker, 1999). Likewise, the CEO's pay slice (i.e., the fraction of the top five compensative packaged captured by the CEO) alludes to his entrenchment and clout with the board (Bebchuk, Cremers, and Peyer, 2008) as does his tenure (Morck, Shleifer, and Vishney, 1988; Denis, Denis, and Sarin, 1997; Hermalin and Weisbach, 1998). With regard to firm-specific governance characteristics, I also include the firm's entrenchment index, which accrues points for various provisions that enhance managerial power or decrease shareholder activism (Bebchuk, Cohen, and Ferrell, 2009), as well as an indicator for whether the firm is incorporated in Delaware, a state whose laws favor managerial power (Bebchuk and Ferrell, 1999).

I use contemporaneous values of the governance characteristics because the CEO's power in securing his involvement in committee assignments is determined by the concurrent governance structure in place. On the other hand, I use lagged values of the economic variables because a firm's response to its needs must be based on ex-ante indications, most likely past realizations. However, it is likely that some indications, such as a change in the number of business segments, are foreseen, allowing for the CEO's involvement to be preemptively adjusted.[9] Thus, to resolve potential timing concerns, I also estimate this regression using contemporaneous values of the economic variables as

[9] Time-*t* values of the economic variables reflect realizations at the end of fiscal-year *t*.

well as using lagged values of the governance variables, and I observe very similar results (untabulated). I estimate two sets of regressions, one using industry dummies and another using industry-specific characteristics. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm), which account for heteroskedasticity and serial correlation (Petersen, 2009).

The results, presented in Table 3, indicate that CEOs with greater tenure are more likely to be involved in apportioning committee assignments. All else equal, a five-year increase in tenure (from two years to seven) is associated with a 7.0% increase (*p*-value = 0.00) in the likelihood to secure a position in this process.[10] Although 42% of family CEOs (as opposed to 12% of non-family CEOs) are involved in apportioning committee assignments, the CEO's status as a *Family CEO* is not a significant determinant in the regression specification using industry dummies (which is largely due to the clustering of family CEOs in the Health industry). However, the regression results using industry characteristics indicate that family CEOs are 10% more likely (*p*-value = 0.12) to be involved. CEOs who are chairmen of their boards are less likely to be involved (coefficient estimate = -1.184, *p*-value = 0.02), though this is largely explained by the incidence of dual CEOs on boards that have Governance/Nominating Committees (53%) as opposed to those without (82%). Within the subsample of firms maintaining a Governance/Nominating Committee, a CEO is marginally more likely to be involved when he doubles as chairman of the board (9%) than when he does not (8%).

In terms of industry-specific differences, the Health industry is 18.6% more likely (*p*-value = 0.02), the High Tech industry is 12.9% more likely (*p*-value = 0.08), the

[10] Propensities are calculated using median values of the remaining control variables.

Manufacturing industry is 11.6% more likely (*p*-value = 0.05), and the Consumer industry is 6.6% more likely (*p*-value = 0.08) to allow the CEO's involvement than is the Other industry, which serves as the base case.[11] In regressions using industry characteristics in place of industry dummies, I observe that highly levered firms are less likely to allow the CEO's involvement during an industry downturn. For a firm in the 90th percentile with respect to its leverage, the CEO is 8.8% less likely to be involved (*p*-value = 0.03) during an industry downturn.

C. Board committees and committee composition

In Table 4, I present the average committee size, frequency, and composition. Committee sizes hover around five, ranging from an average size of 4.1 members (Science and Technology Committee) to 5.5 members (Social Responsibility Committee). All firms have Audit and Compensation Committees and 95% of firms have a Governance/Nominating Committee. Regarding the committees with no regulatory constraints, 53% of firms have a Finance Committee, 49% have a Social Responsibility Committee, 65% have an Executive Committee, 35% have a Pension Management Committee, 7% have a Science and Technology Committee, and 20% of firms have at least one other type of committee.

With respect to the committee compositions, presented in Panel B, independent directors dominate not only the regulated committees, but also the unregulated committees. For instance, 76% of Finance Committee members are independent directors, as opposed to the remaining committee members who split evenly between

[11] The five Fama-French industries here are the Consumer, Manufacturing, High Tech, Health, and Other industries.

insiders and gray outsiders. Moreover, 81% of Social Responsibility Committee members, 56% of Executive Committee members, 84% of Pension Management Committee members, 84% of Science and Technology members, and 73% of the remaining committees' members are independent directors.

Given the variation in the presence of certain board committees across firms, I now explore the determinants of a firm's propensity to maintain various committees. If boards form committees based on ongoing needs that require specialized attention, then the presence of these committees should be associated with various firm and industry factors indicating a need for greater focus on particular functions.

In Table 5, I present the results from logistic regressions of a binary committee indicator on a $PostReg_{i,t}$ indicator and various board, firm, and industry characteristics. I do not include CEO-specific variables because these standing committees are stable through time and do not vary with the incumbent CEO. I use the same board, firm and industry variables as in Table 3, and in addition, I include $Family\ Firm_{i,t}$ (which replaces the CEO-specific $Family\ CEO_{i,t}$), and a structural variable, $log(Board\ Size_{i,t})$. Larger boards are more likely to establish any one of these committees, since they are more likely to benefit from delegating tasks to a smaller subset of board members. Because the listing standards throughout my sample period dictate that firms maintain Audit and Compensation Committees, I exclude these committees from my analysis. As before, I use lagged values of the economic characteristics and contemporaneous values of the governance characteristics, and I estimate two sets of regressions, one using industry dummies and another using industry-specific characteristics. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

Overall, *Board Size* increases the propensity for a firm to maintain any one of these committees (with the exception of the Governance/Nominating Committee). For instance, a 15-member board is 15.3% more likely than a ten-member board to have a Finance Committee (*p*-value = 0.08), and is 19.9% more likely to have a Social Responsibility Committee (*p*-value = 0.02).[12] On the other hand, *Board Size* is negatively associated with the propensity to have a Governance/Nominating Committee (*p*-value = 0.10), though this relation is not as stark (a 15-member board is 2.9% less likely than a ten-member board to have a Governance/Nominating Committee). Surprisingly, family firms are not a significant determinant of the propensity to maintain a Governance/Nominating Committee, though this is largely due to the clustering of family firms in the Health industry (in a simple univariate comparison, 96% of non-family firms, as opposed to 86% of family firms, have a Governance/Nominating Committee). In regression specifications using industry characteristics in place of dummies, I observe that family firms are 8.2% less likely than non-family firms to have a Governance/Nominating Committee (*p*-value = 0.13).

With regard to the economic determinants, older firms are more likely to have a Governance/Nominating Committee (coefficient estimate = 0.828, *p*-value = 0.02), whereas R&D intensive firms are more likely to have a Science and Technology Committee (coefficient estimate = 6.770, *p*-value = 0.00). The Manufacturing industry, which includes energy firms, has the greatest propensity to maintain a Social Responsibility Committee (*p*-value = 0.01), and is 54.7% more likely to do so than the High Tech industry, which has the lowest propensity.

[12] As before, propensities are calculated using median values of the remaining control variables.

5. Empirical results

A. Director committee involvement

To explore the economic-needs versus the rubber-stamp hypothesis, I examine the extent of directors' committee involvement when the CEO is involved in committee assignments as opposed to when he is not, accounting for various firm- and industry-specific economic characteristics:

$$CommitteeInvolvement_{i,t} = \alpha + \beta \times CEOinvolved_{i,t} + X_{i,t}\lambda + Industry_{i,t}\delta + \varepsilon_{i,t}, \quad (1)$$

$CommitteeInvolvement_{i,t}$, the dependent variable, represents directors' average committee involvement on the board of firm i in year t, where an individual director's committee involvement is calculated as the fraction of the board's committees in which he is involved. I estimate four separate regressions for the committee involvements of insiders, non-CEO insiders, gray outsiders, and independent directors. *CEO involved* is an indicator that equals one if the CEO is directly involved in apportioning committee assignments (i.e., he is involved in the Governance Committee), and zero otherwise. $X_{i,t}$ is a vector of firm-specific economic characteristics ($log(Assets_{i,t-1})$, $log(Firm\ Age_{i,t})$, $Leverage_{i,t-1}$, $ROA_{i,t-1}$, $\sigma^2_{i,t-1}$, $Diverse_{i,t-1}$, $CAPEX/Assets_{i,t-1}$, $R\&D/Sales_{i,t-1}$) as well as board-specific logistical factors ($log(Board\ Size_{i,t})$, $No.\ of\ Committees_{i,t}$), which may affect directors' workloads. Because the CEO's direct involvement in apportioning committee assignments is the predominant factor in his power over directors' assignments, I do not include other measures of CEO power nor the *PostReg* indicator to avoid confounding effects. Nonetheless, I observe very similar results when I include previous measures of CEO power, and in later analyses, I estimate difference-in-difference regressions surrounding the 2003 regulatory shock to the CEO's involvement.

I estimate two sets of regressions, one using industry dummies and another using industry characteristics (*Herfindahl Index*$_{i,t-1}$, *Industry Homogeneity*$_{i,t-1}$, *Industry Downturn*$_{i,t-1}$, *Industry Downturn*$_{i,t-1}$ × *Leverage*$_{i,t-1}$). All *t*-statistics are calculated using White-robust standard errors adjusted for clustering.

The results, presented in Table 6, show significantly positive coefficient estimates on the *CEO involved* indicator with respect to the affiliated directors' committee involvements; that is, accounting for firm- and industry-specific economic factors as well as board-specific logistical factors, insiders and gray outsiders are involved in a substantially greater proportion of the board's committees when the CEO is directly involved in committee assignments. For example, the CEO's involvement is associated with a 13.7% increase (*t*-statistic = 6.03) in inside directors' average committee involvement and a 10.7% increase (*t*-statistic = 2.58) in gray directors' average committee involvement. To account for the partial mechanical association (by construction of the *CEO involved* indicator) between the CEO's involvement in committee assignments and the extent of inside directors' committee participation, I also examine non-CEO insiders' committee involvement and observe a significantly positive relation there as well (coefficient estimate = 0.092, *t*-statistic = 3.44).

These results suggest that opportunism, rather than a need for expert advice, determines how affiliated directors are employed on the board. However, there are alternative interpretations for these findings. One possibility is that these affiliated directors' committee involvement reflects a greater advisory need that is not adequately captured by general industry and firm characteristics. Alternatively, it may be the case

that some boards are in tune with the expertise and advisory value of these affiliated directors, and others are not.

To disentangle these competing explanations, I examine the association between affiliated directors' committee involvement and firm value and subsequent operating performance. If affiliated directors' committee involvement simply reflects a firm's economic needs or if only certain firms are aware of the specialized advice that these directors provide, then I expect to see no relation or perhaps a positive relation between firm performance and these directors' committee involvement. Thus, I estimate the following regression:

$$Y_{i,t} = \alpha + CommitteeInvolvement_{i,t}\beta + X_{i,t}\lambda + Industry_{i,t}\delta + Year_{i,t}\gamma + \varepsilon_{i,t}. \qquad (2)$$

$Y_{i,t}$, the dependent variable, consists of two measures: firm value, measured by a proxy for *Tobin's Q*, and subsequent operating performance, measured by the firm's return on assets (*ROA*). Following La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2002) and Gompers, Ishii, and Metrick (2003), among others, I calculate *Q* as the market value of assets scaled by the book value of assets, where the market value of assets is calculated as the book value of assets plus the market value of equity minus the sum of the book value of equity and balance sheet deferred taxes.[13] I calculate market values based on stock prices at the end of fiscal-year *t*, and I obtain very similar results when I use stock prices from three months after the end of fiscal-year *t*. I calculate subsequent operating performance as the average net income scaled by total assets over the subsequent three-year period. *Committee Involvement*$_{i,t}$ is a vector consisting of the average committee

[13] Other studies using Tobin's Q as a measure of firm value include Demsetz and Lehn (1985), Yermack (1996), Daines (2001), Bebchuk and Cohen (2005), Fich and Shivdasani (2006), and Villalonga and Amit (2006).

involvement of affiliated directors, as well as the overall average committee involvement of all board members, which I include to ensure that any negative coefficient estimate I observe on the affiliated director's committee involvement is not simply due to committee involvement per se. For instance, it may be counter-productive to assign every board member to all committees, since one purpose of forming committees is to facilitate organization and decision-making through smaller, more focused subgroups.

$X_{i,t}$ is a vector of the following control variables, guided by prior literature studying this specification: *log(Board Meetings*$_{i,t}$*)*, *log(Board Size*$_{i,t}$*)*, *No. of Committees*$_{i,t}$, *Fraction of Affiliated Directors*$_{i,t}$,, Busy *Board*$_{i,t}$, *CEO Pay Slice*$_{i,t}$, *Entrenchment Index*$_{i,t}$, *DE Incorporated*$_{i,t}$, *log(Assets*$_{i,t}$*)*, *log(Firm Age*$_{i,t}$*)*,, *ROA*$_{i,t}$, $\sigma^2_{i,t}$, *Diverse*$_{i,t}$, and *R&D/Sales*$_{i,t}$.[14] In addition to fundamentals such as size, profitability, and investment opportunities, firm value is also a function of factors facilitating the management (or mismanagement) of assets, as indicated by the fraction of affiliated directors,[15] the CEO's pay slice (Bebchuk, Cremers, and Peyer, 2008), the firm's entrenchment index (Bebchuk, Cohen, and Ferrell, 2009), whether the firm is a non-founder controlled family firm (Villalonga and Amit, 2006), whether a majority of independent directors concurrently serve on three or more board (Fich and Shivdasani, 2006), the size of the board (Yermack, 1996), and whether the firm is incorporated in Delaware (Daines, 2001). I also control for the frequency of annual board meetings, which is indicative of recent performance problems (Vafeas, 1999), and firm diversification, which has negative value

[14] I observe very similar results whether I include *CAPEX/Sales*$_{i,t}$ in addition to, or in place of, *R&D/Sales*$_{i,t}$.

[15] The fraction of affiliated directors is not reliably, negatively associated with firm performance (Hermalin and Weisbach, 1991; Bhagat and Black, 2002; Hermalin and Weisbach, 2003), and in some cases, is even positively associated (Agrawal and Knoeber, 1996).

implications (Lang and Stulz, 1994; Berger and Ofek, 1995). $Industry_{i,t}$ and $Year_{i,t}$ are vectors of industry and year dummies, respectively, and *t*-statistics are calculated using White-robust standard errors adjusted for clustering.

The results, presented in Table 7, show a significantly negative relation between measures of firm performance and affiliated directors' committee involvement. With respect to firm value, the coefficient estimate on affiliated directors' committee involvement is -0.872 (*t*-statistic = -2.47). That is, a 10% increase in their average committee involvement translates to a 0.087decrease in firm value. Such a decrease would demote the median firm, in terms of *Q*, to the 45th percentile. I make similar observations with respect to subsequent operating performance, where a 10% increase in affiliated directors' committee involvement is associated with a 0.4% average, annual decrease in subsequent *ROA* (*t*-statistic = -1.80).

These results further punctuate the opportunism (rather than the enhanced expertise) characterizing boards in which affiliated directors have high committee involvement, because neither greater awareness nor a greater advisory need can explain the negative association between firm performance and the extent of affiliated directors' committee involvement. Moreover, the extent of these directors' committee memberships is not significantly associated with past performance (as shown in Table 6), suggesting that these findings are not a by-product of some optimal response to negative past performance.

B. Committee compositions

To further explore this issue, I also examine individual committee compositions. If an involved CEO is acting in shareholders' interests, then (irrespective of the firm's advisory needs) he should not endow affiliated directors with membership in committees such as the Audit, Compensation, and Governance/Nominating Committees, which predominantly entail monitoring and disciplinary functions.

In Table 8, I compare the fraction of a committee's members who are insiders, gray outsiders, or independent directors when the CEO is directly involved in apportioning committee assignments (i.e., when he is a member of the Governance Committee) as opposed to when he is not. The differences are stark in committees which hold a potential advisory role for affiliated directors. For example, 57% of Finance Committee members are affiliated directors when the CEO is involved as opposed to 19% when he is not, and 72% of Executive Committee members are affiliated directors when the CEO is involved as opposed to 39% when he is not. However, the differences are also stark in the committees which predominantly entail monitoring responsibilities. For example, 21% of Audit Committee members are affiliated directors when the CEO is involved as opposed to 8% when he is not, and 12% of Compensation Committee members are affiliated directors when the CEO is involved as opposed to 5% when he is not.

To examine these differences in a multivariate setting, I estimate the following regression, using the same specification as in Eq. (1):

$$CommitteeComposition_{i,t} = \alpha + \beta \times CEOinvolved_{i,t} + X_{i,t}\lambda + Industry_{i,t}\delta + \varepsilon_{i,t}, \quad (3)$$

$CommitteeComposition_{i,t}$, the dependent variable, represents the fraction of committee members who are insiders, non-CEO insiders, gray outsiders, or independent outsiders. Separate regressions are estimated for each of the Audit, Compensation, Governance/Nominating, Finance, Social Responsibility, Executive, Pension Management, and Science and Technology Committees. As before, all *t*-statistics are calculated using White-robust standard errors adjusted for clustering.

The results, presented in Table 9, show a significantly positive (negative) relation between the CEO's involvement and the fraction of committee members who are affiliated (independent) directors. Across the board, there are fewer independent directors (and equivalently, more affiliated directors) on each of the committees when the CEO is directly involved in apportioning committee assignments (Panel D). For instance, his involvement is associated with a 12.2% decrease (*t*-statistic = -3.38) in the percentage of independent directors on the Audit Committee and a 6.1% decrease (*t*-statistic = -2.17) in the percentage of independent directors on the Compensation Committee. The CEO's involvement is also associated with substantial declines in the incidence of independence directors on the unregulated committees, with decreases of 36.2% (*t*-statistic = -4.17), 32.8% (*t*-statistic = -4.14), 23.8% (*t*-statistic = -2.60), 8.5% (*t*-statistic = -3.79), and 28.5% (*t*-statistic = -3.13) on the Finance, Executive, Pension Management, Science and Technology, and Remaining Committees, respectively.

In examining the affiliated directors in greater detail, I find that the CEO's involvement is associated with a substantial increase in the incidence of insiders on the unregulated committees (Panel A). For instance, the CEO's direct involvement is associated with a 34.0% increase (*t*-statistic = 3.29) in the percentage of insiders on the

Finance Committee, a 10.1% increase (*t*-statistic = 2.41) in the percentage of insiders on the Social Responsibility Committees, an 18.9% increase (*t*-statistic = 1.74) in the percentage of insiders on the Pension Management Committee, and a 24.7% increase (*t*-statistic = 3.37) in the percentage of insiders on the Executive Committee. However, consistent with the membership restrictions on the Audit and Compensation Committees, I do not find a significant difference in the insider representation attributed to the CEO's involvement in committee assignments (coefficient estimates of 0.002 and 0.002 and *t*-statistics of 0.92 and 0.51 respectively). By construction of the *CEO involved* indicator, the significant coefficient estimate with respect to the Governance/Nominating Committee is largely (though not entirely) mechanical. I make similar observations in Panel B, which focuses on the committee presence of the non-CEO inside directors.

With respect to gray directors' committee presence (Panel C), the strongest increases associated with CEO involvement are in the Audit, Compensation, and Governance/Nominating Committees, where the CEO's involvement is associated with an 12.0% (*t*-statistic = 3.28), 5.9% (*t*-statistic = 2.02), and 9.5% (*t*-statistic = 2.33) increase in terms of gray directors' representation, respectively.

These results suggest that (irrespective of the firm- or industry-specific economic needs of the firm) the CEO loads affiliated directors on more committees when he is in the power to do so, and that this behavior reflects opportunism rather than a calculated tradeoff between the monitoring and advisory needs of the firm. Moreover, given the membership restrictions on certain committees, he strategically assigns gray outsiders to the Audit and Compensation Committees and inside directors to the remaining (unregulated) committees.

C. Committee compositions after shock to CEO involvement

The 2002-2003 time period is characterized by heightened regulatory constraints, with the Sarbanes Oxley Act of 2002 imposing stricter independence criteria on Audit Committees and subsequent NYSE amendments forcing further governance changes on publicly traded firms. One amendment in particular imposed membership restrictions on the Governance Committee, disallowing insiders' (including the CEO's) involvement. If affiliated directors were contracted as expert advisors rather than rubber stamps, then this shock to the CEO's control over committee assignments should not alter their use in this capacity.

To examine the changes in committee composition associated with the regulatory shock to the CEO's control, I study the pre- and post-regulation committee compositions of the firms which, prior to 2003, had allowed the CEO to be involved in apportioning committee assignments. Because additional independence criteria were imposed on the Audit, Compensation, and Governance/Nominating Committees during this time, I focus only on the remaining, unregulated committees, and I estimate the following regression:

$$CommitteeComposition_{i,t} = \alpha + \beta \times CEOinvolved_{i,t} + X_{i,t}\lambda + Industry_{i,t}\delta + \varepsilon_{i,t}. \quad (4)$$

$CommitteeComposition_{i,t}$, the dependent variable, represents the fraction of committee members who are insiders (Panel A), insiders other than the CEO of the firm (Panel B), gray outsiders (Panel C), or independent outsiders (Panel D). Separate regressions are estimated for each of the Finance, Social Responsibility, Executive, Pension Management, and Science and Technology Committees. $PriorInvolvement_{i,t}$ equals one if (prior to regulatory changes in 2003) the CEO of firm *i* was directly involved in committee assignments, and zero otherwise. $PostReg_{i,t}$ equals one in years greater than or

equal to 2003, and zero otherwise. $X_{i,t}$ is a vector of the same control variables as in regression Eqs. (1) and (3), and $Industry_{i,t}$ is a vector of industry dummies. All *t*-statistics are calculated using White-robust standard errors adjusted for clustering.

The results, presented in Table 10, show a statistically significant, negative association between the $PriorInvolvement_{i,t}$ x $PostReg_{i,t}$ interaction term and affiliated directors' committee representations. For instance, within the *PriorInvolvement* firms, non-CEO insider representation on the Finance, Social Responsibility, Executive, and Pension Management, and Remaining Committees decreases by 17.9% (*t*-statistic = -4.03), 6.2% (*t*-statistic = -2.71), 11.2% (*t*-statistic = -1.89), 10.1% ((*t*-statistic = -1.81), and 6.5% (*t*-statistic = -1.30), respectively, in conjunction with the regulatory shock to the CEO's involvement in committee assignments.

With respect to gray outsiders' committee representations, I mostly observe weakly negative coefficient estimates on the $PriorInvolvement_{i,t}$ x $PostReg_{i,t}$ interaction term, reflecting the previous observation that CEOs mostly preferred to load these directors on the regulated committees where insider membership was restricted. Nonetheless, their representation on the Executive and Remaining Committees decreases by 8.3% (*t*-statistic = -2.32) and 16.4% (*t*-statistic = -2.74), respectively, in conjunction with the regulatory shock.

Accordingly, independent directors' committee representations show significantly positive coefficient estimates on the $PriorInvolvement_{i,t}$ x $PostReg_{i,t}$ interaction term, reflecting the overall joint decrease in affiliated directors' (i.e., insiders and gray outsiders') memberships in these committees. Within the *PriorInvolvement* firms, independent directors' representation on the Finance, Social Responsibility, Executive,

Pension Management, and Remaining Committees increases by 14.6% (*t*-statistic = 2.83), 9.0% ((*t*-statistic = 1.68), 16.1% (*t*-statistic = 2.24), 6.0% (*t*-statistic = 1.03), and 22.6% (*t*-statistic = 2.52), respectively, in conjunction with the regulatory shock to the CEO's involvement.

Overall, these results show a marked decrease in the committee representation of affiliated directors (and, equivalently, a marked increase in the committee representation of independent directors) associated with the CEO's mandated exclusion from apportioning committee assignments. Furthermore, these results are not driven by firms' needs to meet new board independence requirements. The vast majority (91%) of firms had independent boards even prior to the regulatory changes in 2003, and I obtain very similar results when I focus on the subsample of firms with independent boards as of 2001 (or as of 2002).

6. Conclusion

Ideally, directors are selected and assigned roles within the board based on monitoring or expertise-based considerations. However, shareholders are not directly involved in the nomination process, nor do they determine in what capacity the elected directors are employed within the board. Thus, to curb potential abuses, listing standards have imposed restrictions on board composition, requiring that at least half of all members have neither financial nor familial ties to the CEO or to the firm. However, given the lack of association between firm performance and the presence of affiliated directors on the board (Bhagat and Black, 2002; Hermalin and Weisbach, 2003), it is not clear, from a shareholder's standpoint, that these independence requirements are desirable

(particularly, if affiliated directors, despite being poorer monitors, fulfill a valuable advisory role to some firms).

In this study, I use detailed data on committee memberships to examine directors' roles within the board. I find that affiliated directors are given substantially greater committee involvement when the CEO has direct control over apportioning committee assignments; their greater involvement is reflected not only in the committees with potential advisory roles, but also in those which predominantly entail monitoring and disciplinary responsibilities. Moreover, I find that the extent of affiliated directors' involvement in the board is substantially and negatively associated with firm value and subsequent operating performance.

Collectively, the evidence presented in this paper suggests that affiliated directors, on average, are contracted for their compliance rather than for their expert advice. Thus, although in theory, independence requirements (as well as constraints on the CEO's involvement) could force firms away from their optimal configuration, the evidence indicates that in practice, legal constraints allow a second-best solution in the face of agency problems.

Second Essay: It Pays to Have Friends

1. Introduction

Amid corporate scandals and conflicts of interest, increased board independence is an oft prescribed remedy. Many academic studies examine the monitory benefits of independent boards (e.g., Weisbach, 1988; Byrd and Hickman, 1992; Brickley, Coles, and Terry, 1994; Cotter, Shivdasani, and Zenner, 1997; Mayers, Shivdasani, and Smith, 1997; and Paul, 2007), and mutual fund investors are calling for more independent directors to oversee fund managers. Moreover, recent corporate-governance reforms issued by the NYSE, Amex, and Nasdaq require that listed firms (with some exceptions) have independent boards. But are these "independent" boards really independent?

Currently, a director is classified as independent if he has neither financial nor familial ties to the chief executive officer (CEO) or to the firm. Absent from these conventional criteria are social ties; that is, the nonfamilial, informal connections. However, given that agents are not driven solely by economic gains (e.g., Mills and Clark, 1982; Silver, 1990; and Uzzi, 1996), social ties are a potentially rich source of a director's dependence to the CEO. Board consultants in the popular press broach this issue, saying that when directors debate whether or how to fire a CEO, "they [the directors] typically need the most help in dealing with their attachment to the CEO" (Business Week, 2007). Our purpose is to incorporate these heretofore omitted ties into the definition of board independence and to examine their relevance to the monitory and disciplinary effectiveness of the board.

Drawing from the economics and sociology literatures, we propose mutual alma mater, military service, regional origin, academic discipline, and industry as indications

of an informal tie between a director and the CEO. These mutual qualities and experiences, through homophily (i.e., an affinity for similar others), facilitate interactions and thereby foster personal connections. Whether it is conscious or not, actors enjoy an easier mutual understanding and are more comfortable with others who share similar characteristics and experiences (Marsden, 1987; and McPherson, Smith-Lovin, and Cook, 2001), and "contact between similar people occurs at a higher rate than among dissimilar people" (McPherson, Smith-Lovin, and Cook, 2001, p. 416).

Using hand-collected data, we focus on the Fortune 100 firms from 1996 to 2005. We find that, under the conventional measure of independence, 87% of the boards in our sample are classified as independent; that is, these boards have a majority composition of conventionally independent directors. Under our new measure, which augments the conventional definition with the proposed social restrictions, this percentage drops to 62%. Moreover, the incidence of socially linked directors increases as a new CEO's tenure at the firm progresses, suggesting that CEOs select directors along these social dimensions.

To illustrate a conventionally independent board that is not conventionally and socially independent, we consider the board of Cardinal Health. In the year 2000, this board had 13 directors, ten of whom were conventionally independent of the CEO. However, one conventionally independent director was not only from the same hometown, but also graduated from the same university as the CEO (incidentally, this director provided a job, at his own firm, for the CEO's son). Another conventionally independent director graduated from the same university and specialized in the same academic discipline as the CEO. Similarly, three others shared informal ties with the

CEO, and ultimately, only five of the 13 directors were conventionally and socially independent of the CEO.

To test the monitory relevance of these social ties, we examine the differential association between board independence and the level of CEO compensation when we replace the conventional measure of board independence (which does not consider social ties) with our new measure. If these social ties do not affect the disciplinary or monitory capacity of directors, then a director who is conventionally independent but socially linked to the CEO is an equally effective monitor as a director who is both conventionally and socially independent. As such, we would expect no differential association between board independence and the level of compensation attributed to this distinction.

We find no significant difference in the CEO's total annual compensation when a conventionally independent board is present. However, when a conventionally and socially independent board is present, the CEO's total compensation decreases, on average, by $3.3 million. This magnitude is not only statistically significant, but also economically meaningful (average annual compensation is $12.8 million), and we make similar observations with respect to the CEO's annual salary plus bonus. In addition, we find a compensation differential within the subsample of firms with conventionally independent boards; those firms with boards that are conventionally independent but not conventionally and socially independent award a significantly higher level of compensation to their CEOs. These results further signify that it is not only the conventional ties but also the social ties that matter. Moreover, the excess compensation attributed to this type of board extends to a negative association with subsequent operating performance. This evidence punctuates the monitory relevance of these social

ties because alternative interpretations of this excess component of compensation (e.g., the CEO of a more complex firm could require a higher level of compensation and a friendlier board) cannot explain its negative association with the firm's subsequent performance.

We also examine the role of social ties in other supervisory and disciplinary actions of the board, such as CEO turnover and pay-performance elasticity. We find that, within the subsample of firms with conventionally independent boards, those CEOs whose boards are not conventionally and socially independent exhibit a lower sensitivity of turnover and compensation to performance. We also find that CEOs whose audit committees are conventionally independent but socially linked (to the CEO) receive larger bonuses than otherwise equivalent CEOs whose audit committees are both conventionally and socially independent, suggesting that social ties affect the audit committee's oversight of financial statements.

Overall, our results suggest that social ties affect how directors monitor and discipline the CEO and that, consequently, a considerable percentage of the boards currently classified as independent are substantively not.

This paper is organized as follows. In Section 2, we discuss the significance of social ties, we develop our hypotheses, and we discuss our measures for social ties. In Section 3, we describe our data sources, variables, and summary statistics. In addition, we examine what determines the incidence of socially dependent directors. In Section 4, we examine the monitory relevance of social ties in the level of compensation, pay-performance elasticity, and CEO turnover. Moreover, we explore alternative interpretations of the excess compensation attributed to social ties. In Section 5, we

discuss our contribution to the corporate governance literature, and in Section 6, we conclude.

2. Motivation, hypotheses, and identification of social ties

Given that actors are not driven solely by financial motives, social ties have a potentially large impact on a director's monitory and disciplinary capacity. In particular, when two actors share a social bond, there is a shift in normative expectations, whereby their actions are governed by communal norms, which promote mutual caring and trust, as opposed to exchange-based norms, which promote dispassionate reciprocation (Mills and Clark, 1982; and Silver, 1990). Furthermore, a social relationship "disposes one to interpret favorably another's intentions and actions" (Uzzi, 1996, p. 678). Thus, when a CEO enjoys a personal tie with a director, the director's resulting concern for the CEO clouds objective monitoring and disciplining of the CEO.[16]

There is considerable evidence that social ties influence economic outcomes. Uzzi (1996) studies the apparel industry and observes that social ties promote cooperation and "voluntary, non-obligating exchanges of assets and services between actors" (p. 678). For example, a buyer will find alternate uses for fabric mistakes rather than refuse the material at the manufacturer's cost. Uzzi (1999) studies middle-market banking and finds that social ties between firms and their lenders affect firms' access to and cost of capital. Ingram and Roberts (2000) find a substantial increase in hotel yields (i.e., revenue per room) when competing hotel managers share a social tie. This increased yield is not achieved through explicit collusion or price-fixing, but through collaboration,

[16] His disutility from violating the normative expectations imposed by social ties is also a factor. This disutility can be self-imposed (e.g., guilt) or imposed by others (e.g., disapproval) (Elster, 1989).

information exchange, and the mitigation of aggressive competitive behavior. Westphal, Boivie, and Chng (2006) find that managers form social ties with the managers of firms to which they are vertically dependent in order to mitigate opportunism, and Cohen, Frazzini, and Malloy (2008; 2009) find that mutual fund managers and sell-side equity analysts enjoy an informational advantage via their education networks.

A. Measuring and identifying social ties

Unlike family or business ties, social ties are neither legally defined nor straightforward to identify. Studies on social embeddedness generally rely on surveys and interviews to identify the explicit social ties between actors (e.g., Uzzi, 1996, 1999; Westphal, 1999; Ingram and Roberts, 2000; McDonald and Westphal, 2003; and Westphal, Boivie, and Chng, 2006); that is, individuals are asked to report whether and with whom they share social ties.[17] In contrast, our approach is to operationalize social ties through mutual qualities and experiences, which, through homophily (i.e., an affinity for similar others), facilitate interactions and thereby foster personal connections. Whether it is conscious or subconscious, "contact between similar people occurs at a higher rate than among dissimilar people" (McPherson, Smith-Lovin, and Cook, 2001, p. 416), and actors enjoy an easier mutual understanding and are more comfortable with others who share similar characteristics and experiences (Marsden, 1987; and McPherson, Smith-Lovin, and Cook, 2001). Cohen, Frazzini, and Malloy (2008; 2009) use a similar approach, linking mutual-

[17] For instance, survey participants are asked to "indicate whether each person is (i) among your closest friends, (ii) a friend, but not among your closest friends, (iii) less than a friend but more than an acquaintance, (iv) an acquaintance" (Westphal, Boivie, and Chng, 2006, p. 433). Answers (i) and (ii) are coded "friendship ties," whereas answers (iii) and (iv) are not.

fund managers and sell-side equity analysts to corporate officers and directors via shared education networks (i.e., mutual alma mater).

This approach has several advantages. For one, unlike survey-based measures, the measures we propose are broadly observable and (relatively) easy to identify. The systematic availability of characteristics such as educational institution, regional origin, and military service makes such measures attractive for use in future studies. Furthermore, surveys are designed to capture conscious "friendship ties" (e.g., see sample survey question in the footnote from the previous paragraph), whereas many homophilous ties are likely built subconsciously, making them difficult to pinpoint in survey responses.

Drawing from the economics and sociology literature, we propose mutual alma mater, military service, regional origin, discipline, and industry as indications of an informal tie between a director and the CEO. Because the probability of a social connection increases with similarity (McPherson, Smith-Lovin, and Cook, 2001), we require that a director and CEO (directly) share at least two of these ties to constitute social dependence. Alternatively, a director and CEO can share one direct tie and one third-party connection (to whom each is directly dependent), which enhances an existing tie by strengthening shared normative expectations (Granovetter, 2005) as well as facilitating further contact. Defining director dependence in dichotomous terms (a director is either independent or not) allows us to define whether a majority of board members are independent, which in turn allows us to examine whether the boards currently classified as independent are still classified as such once social ties are

considered. Later, we explore various other specifications, such as the extent of a director's dependence (i.e., the number of ties shared).

Regional Origin. There are unique regional qualities that vary within the United States. For instance, there is a marked regional distinction in the choice of leisurely activities that is unexplained by demographic and socioeconomic differences (Marsden, Reed, Kennedy, and Stinson, 1982), and "[Americans] think of themselves as linked geographically by certain traits, such as New England self-reliance, southern hospitality, midwestern wholesomeness, western mellowness" (US Department of State, 2003). This regional clustering of dialect, beliefs, culture, and lifestyle contributes to an affinity for others from the same locale. For example, regional homophily appears in the social choices of college students, exceeding what is expected if social circles are formed randomly with respect to regional origin (Reed, 2003). We define regional origin as the non-US country or US region of birth, because birthplace is a readily available and easily defined measure, as opposed to the more difficult concept of being from somewhere. Moreover, birthplace is highly correlated with this vaguer notion of home. From 1995 to 2000, 8.7% of nationals changed their state of residence, and only 4.6% changed regions (US Census Bureau, 2003).[18] In accordance with the US Census Bureau, we cluster US states and territories into the following regions: South, Northeast, Midwest, Mountain, Pacific, and Territories.[19] We focus on these broader regional categories to keep with the

[18] One possible concern is that the childhood mobility patterns of CEOs and directors are much higher, because they likely come from more educated and therefore more mobile families. However, of the educated, married population of young adults (ages 25 to 39), only 18.6% changed their state of residence from 1995 to 2000 (US Census Bureau, 2003), and we project that even fewer changed regions.

[19] Details are available at http://www.census.gov/geo/www/us_regdiv.pdf.

theoretical and empirical groundwork on regional homophily. However, we also consider a finer classification of regional origin using individual states.

Mutual alma mater, military service, discipline, and industry. Connections forged through a mutual alma mater enjoy enhanced interaction via in-jokes, shared traditions, and a sense of group belonging, as evidenced by alumni networks, newsletters, donations, and college sports events. Similarly, veterans share a bond through their common experiences (Crosse and Hocking, 2004; and Friedman, 2005). Crosse and Hocking (2004) argue that veterans are in an environment that "depends on a highly structured, organized force… [with] a demand not paralleled in any other work environment," suggesting that this unique shared experience contributes to a steadfast bond among veterans. Mutual industry and academic discipline signify additional similarities through shared interests and common experiences, providing further points of contact. Moreover, these shared characteristics denote similarities beyond the common experiences they provide, because they are endogenously determined.

In our classification scheme, we classify the university ties in tandem with the director's and the CEO's age class(es), because an overlapping period of attendance starkly increases similarities in experiences. Moreover, university cohorts are more likely to have known each other prior to an appointment. To determine mutual industry and discipline, we partition industries of primary employment using the Fama-French (1997) 49-industry classification, and we partition academic majors into 26 categories from the *US News and World Report*. A full list of academic disciplines is provided in Appendix E.

B. Hypothesis development

In terms of agency theory, the board's primary role is to enforce shareholders' interests and to mitigate the CEO's self-serving behavior. With respect to executive compensation, this framework specifies that the board's role is to lower the level of total compensation. In reality, however, many directors themselves are not perfect agents and likewise suffer the agency problems they were designed to address. Thus, agency theory prescribes that boards be primarily composed of independent directors because they are more likely to objectively monitor and discipline the CEO (Fama and Jensen, 1983). This is not to say that an independent board is an unconditionally more effective one. Studies focusing on the advisory role of the board argue the merits of a friendlier board (Adams and Ferreira, 2007; Coles, Daniel, and Naveen, 2008; and Linck, Netter, and Yang, 2008), but insofar as its disciplinary or supervisory role is concerned, the board is more effective as an independent unit. Because compensation is a monitory issue, the possible advisory benefits of a dependent board do not extend to (shareholder) benefits in terms of CEO compensation.

We expect that it is not only the conventional (i.e., financial and familial) ties that affect a board's monitory effectiveness, but also the social ties that matter. To test the relevance of these social ties, we examine the differential association between board independence and the level of executive compensation when we augment the conventional definition of board independence with our proposed social restrictions. If social ties are irrelevant, then we should observe no differential relation between board independence and the level of compensation when we replace the conventional board-independence measure with our new measure. Moreover, we examine the variation in

compensation within the subset of firms whose boards are conventionally independent. There are two types of conventionally independent boards: those that are conventionally and socially independent, and those that are not. If social ties do not matter, then there should be no compensation differential attributed to this distinction.

3. Data description

This section discusses our data sources and regression variables. We also explore the determinants of a board's social composition, in particular the hypothesis that CEOs desire socially dependent directors.

A. Sources

We focus on the Fortune 100 firms (as declared in 2005) and obtain a list of these Fortune 100 directors and CEOs from the Investor Responsibility Research Center (IRRC) and Compustat Executive Compensation databases. Our sample period runs from 1996 to 2005 and was determined by the availability of the IRRC Directors database. We hand-collect data for each CEO and director's educational institution, military service, regional origin, and academic discipline from the Marquis Who's Who database. To determine each director's industry of employment, we first exploit the Primary Employment field provided by the IRRC Directors database, and for the remaining director-years with a blank Primary Employment field, we collect this information from the Marquis Who's Who and Notable Names databases. Next, we match each of these firms to an SIC code (we create a separate category for retired directors), and we use the Fama-French (1997) 49-industry classification to define industry ties. For publicly traded

firms, we obtain the corresponding SIC code through the Center for Research in Security Prices (CRSP), and for the remaining firms, we determine SIC codes using a combination of the Manta, Websters Online, Goliath, Alacra Store, American Hospital Directory, Law Firm Directory, Martindale-Hubbell, and HG.org databases. Furthermore, we collect CEO-award information from the *Business Week* archives, and we collect information on family-run firms by cross-examining the information provided in *Family Business* with proxy disclosures, the Compustat Executive Compensation database, the IRRC Directors database, and the Blockholders database. We obtain executive compensation, financial statement, and stock price data from the Compustat Executive Compensation, Compustat, and CRSP databases, respectively.

Of the Fortune 100 firms, four are not publicly traded, and of the 96 publicly traded firms, three are not covered by the IRRC Directors database. In regressions using past performance as a measure of the incumbent CEO's quality, we further exclude those firm-years in which there are new arrivals because past firm performance cannot be attributed to an incoming CEO. Our final sample consists of 704 firm-years (1,568 directors and CEOs).

B. Regression variables

B.1. Executive compensation

We use two different measures of the level of compensation, our dependent variable: *Salary + Bonus* and *Total Compensation*. *Salary + Bonus* consists of only the base salary plus bonus. *Total Compensation* is calculated as the sum of base salary, bonus, long-term

incentive payouts, the value of restricted stock grants, and the Black-Scholes value of option grants converted into their stock equivalents using the options' median delta.[20]

B.2. Board independence

Following regulatory convention, the board-independence dummy is an indicator variable that equals one if a majority of the directors are classified as independent, and zero otherwise.[21] We compare and contrast two classifications of director independence, which we refer to as the c*onventional measure* and the *new measure*.

Under the *conventional measure* (as specified by the IRRC), a director is classified as independent if he or she is not a current or former employee of the firm (or of a subsidiary of the firm), a relative of an executive officer, a customer of or a supplier to the company, a provider of professional services, a recipient of charitable funds, a designee under a documented agreement by a significant shareholder or group, or interlocked with an executive of the firm.[22] An interlocking directorate, also known as board cooptation, is a situation in which an executive of firm X is a director at firm Y at the same time that an executive of firm Y is a director at firm X. The list of independence criteria also includes a catchall phrase for any other type of affiliation that poses a potential conflict of interest, because there are a myriad of possibilities that cannot be

[20] Following Baker and Hall (2004), we use a delta of 0.7, which approximates the median delta in the Hall and Liebman (1998) data.

[21] Other studies using an independence dummy or piece-wise linear approach include Weisbach (1988), Hermalin and Weisbach (1991), Byrd and Hickman (1992), Cotter, Shivdasani, and Zenner (1997), and Masulis, Wang, and Xie (2007).

[22] Details are available at http://wrds.wharton.upenn.edu/support/docs/irrc/directors_terms.doc.

definitively specified. However, the scope of this catchall is limited to proxy disclosures, and firms are not inclined to report beyond what is explicitly required.

Under the *new measure*, a director is classified as independent if he or she is both conventionally and socially independent, whereby a director is classified as socially dependent if the director and CEO have two or more of the following in common: 1) served in the military, 2) graduated from the same university (and were born no more than three years apart), 3) were born in the same US region or the same non-US country, 4) have the same academic discipline, 5) have the same industry of primary employment, or 6) share a third-party connection through another director to whom each is directly dependent. For example, suppose that the CEO is a 55-year-old, Stanford-educated, business major who served in the military and was born in the Northeast, and director A is a 55-year-old, Stanford-educated, electrical engineering major born in the South. Although the director and CEO share only one direct tie (i.e., through mutual alma mater), if there is third-party director B who is a 57-year-old Stanford graduate who studied electrical engineering and served in the military, then we consider director A socially dependent to the CEO (because in addition to their mutual alma mater connection, the two are socially connected to a mutual third party with whom each shares two direct ties).

B.3. Other regression variables

In addition to the board-independence dummy, we include the following control variables: *ln(Total Assets)*, *ln(MB)*, *ROA*, *RET*, σ^2, *CEO Equity Holdings*, *CEO Award*, *CEO=Chairman*, *CEO Tenure*, *ln(Board Size)*, *Old Directors*, *Busy Board*, *Directors'*

Equity Holdings, *CEO from Other Company*, *Classified Board*, *Democracy Firm*, *Dictatorship Firm*, and *Family Firm* (Appendix F has a description of each variable and its expected relation with the level of CEO compensation). We also include year dummies as well as industry dummies using the Fama-French (1997) five-industry classification.[23] We use the five-industry classification because finer industry classifications result in much sparser partitions, with many industry categories having only one or two firms. Thus, using such fine classifications to define our industry dummies would amount to including firm-specific dummies, which we do not include due to the high persistence of many of the governance variables (e.g., board independence, classified-board provision).

C. Breakdown of social ties

In Table 11, we present summary statistics on the average proportions of directors with various ties to the CEO or to the firm. We determine average proportions by first calculating, for each firm-year, the proportion of directors with the relation in question, and then taking the pooled mean of these proportions. For instance, the average proportion of directors with a social tie is obtained by calculating for each firm-year the proportion of directors with a social tie and then taking the pooled average across all firm-years.

In our sample, we find that social ties between CEOs and directors are about as common as conventional ties. The average proportion of conventionally dependent directors is 0.296, and the average proportion of socially dependent directors is 0.276.

[23] Obtained from Ken French's website: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

The average proportion of directors who are either conventionally or socially dependent (or both) is 0.416, indicating a substantial presence of social ties among the directors who have a conventional tie to the CEO.

We also examine what proportion of the socially dependent directors share each of the following specific ties with the CEO: military service, alma mater, regional origin, academic discipline, industry, and third-party ties. We find that, of all socially dependent directors, 8.9% share a military connection with, 49.6% graduated from the same university as, 68.0% share regional origin with, 60.2% have the same academic discipline as, 65.2% have the same industry of primary employment as, and 66.0% share a third-party connection with the CEO. Moreover, we observe a substantial presence of these specific ties among the directors who have a conventional tie to the CEO. Of the conventionally dependent directors, 6.6% share a military connection with, 39.0% graduated from the same university as, 44.9% share regional origin with, 42.6% have the same academic discipline as, 66.0% have the same industry of primary employment as, and 43.7% share a third-party connection with the CEO.

D. Board characteristics and the determinants of the incidence of socially linked directors

In Table 12, we present summary statistics on various CEO and board characteristics. In Column 1, which presents statistics for the entire sample, we observe that 87.4% of the boards are conventionally independent. However, when we augment the conventional definition of director independence with the additional social restrictions, the percentage

of independent boards drops to 62.4%. Thus, if social ties matter, then a substantial proportion of conventionally independent boards are not truly independent.

We now explore the determinants of a board's social dependence. A CEO's clout in the board-selection process "comes from his perceived ability relative to a replacement" (Hermalin and Weisbach, 1998, p. 97). Thus, if CEOs desire socially dependent directors, we expect that the incidence of such directors increases with quality or power signals, such as tenure and board chairmanship. Consistent with this hypothesis, we observe in Table 12 that, on average, the CEOs of firms whose boards are conventionally independent but not conventionally and socially independent (Column 4) have greater tenure and more often have busy boards; these CEOs are also more likely to have received a "Business Week Best Manager" award than the CEOs of firms whose boards are both conventionally and socially independent (Column 3).

In Table 13, we present the results from a pooled regression of the board's social-dependence fraction on various CEO, board, and firm characteristics. We use lagged values of the economic variables, such as past performance and firm size, because selection power and selection decisions based on economic determinants must be based on past values of such variables. To ensure that past performance is matched to the appropriate CEO, we exclude those firm-years in which there are new arrivals because past firm performance cannot be attributed to an incoming CEO. On the other hand, we use contemporaneous values of the board-composition variables, because directors can be selected mid-year, and the CEO's current power in the selection process is based on the current governance structure. To address potential timing concerns, we also estimate our regression using lagged values of the governance variables, and we obtain similar results

(untabulated). We include year dummies and industry dummies using the Fama-French (1997) five-industry classification, and all *t*-statistics are calculated using White standard errors adjusted for clustering (by firm), which account for heteroskedasticity and serial correlation (Petersen, 2009).

We find that *CEO Tenure* has a significantly positive relation with the incidence of socially dependent directors. On average, a CEO with six more years of tenure has a board with a social-dependence fraction that is 0.042 greater (*t*-statistic = 2.11). Moreover, when the CEO has received a "Business Week Best Manager" award, the social-dependence fraction increases by 0.077 (*t*-statistic = 2.12). This positive association lends further support to the hypothesis that CEOs desire socially dependent directors, because a "Best Manager" distinction alludes to the CEO's power and thereby to his clout in the selection process. The social-dependence fraction is also significantly higher, both economically and statistically, when the board is busy (coefficient estimate = 0.052, *t*-statistic = 2.30) as well as when there is a greater proportion of old directors on the board (coefficient estimate = 0.263, *t*-statistic = 3.12); presumably, these variables indicate a lack of director oversight, which also empowers the CEO. Finally, the coefficient estimates on the industry dummies (untabulated) indicate that, all else equal, the *Health* industry has the highest incidence of socially dependent directors, followed by the *High-Tech* and *Other* industries, respectively. The *Consumer* and *Manufacturing* industries have the lowest incidence of socially dependent directors.

The positive association between the degree of social dependence and indicators of CEO quality or power is consistent with the idea that CEOs select directors with whom they share social ties. To further explore this interpretation, in Fig. 1, we examine the

changes in a board's social dependence when a new CEO is appointed. If CEOs do not seek socially linked directors, then, on average, we expect to see no time-series increase in the social-dependence fraction as the new CEO advances in tenure. Using an unbalanced panel of 81 CEO appointments, we plot the evolution of the board's social dependence, in event time, from the year prior to the new CEO's arrival ($t = 0$) to the third year of the new CEO's tenure ($t = 3$).[24] In Panel A, we plot the average fraction of directors who are socially dependent with respect to the incumbent CEO, and in Panel B, we plot the percentage change in the average fraction of socially dependent directors relative to time $t = 0$. Upon arrival of the new CEO, we observe an 8.1% decrease from 0.272 to 0.250 in the average proportion of directors who are socially dependent to the incumbent CEO. Then, as the new CEO's time with the firm progresses, he seems to rebuild the board's social dependence. By his third year, the average social-dependence fraction is back up to 0.284, suggesting that CEOs select directors along these social dimensions.

Given that other indicators of quality or power are associated with greater clout in the director selection process, we expect the rate at which a board's social dependence increases with tenure to be higher for those CEOs who exhibit these quality or power signals. Consistent with this hypothesis, we find that, when we interact CEO tenure with the various indicators of CEO quality or power (untabulated), ten of the 14 interactions

[24] One possible concern with the use of an unbalanced panel is that our figure could reflect cross-sectional variation in social ties as opposed to time-series variation. In particular, the positive association between CEO tenure and the board's social dependence could come solely from a socially dependent board's unwillingness to replace a CEO to whom it is socially linked. This interpretation signifies the disciplinary importance of social ties, but it is likewise interesting to know whether CEOs actively select such directors. Thus, we also investigate a balanced panel of CEO appointments, and we observe a similar pattern depicting an overall increase in the incidence of social ties over time (untabulated).

terms have the predicted sign and an *F*-test indicates significance at the 0.01 level, suggesting that such measures contribute to a faster increase in the incidence of socially dependent directors.

4. Empirical results

We now proceed to examining the effect of social ties on executive compensation. In Table 14, we present summary statistics on CEO compensation and various firm characteristics (Appendix G contains a correlation matrix of variables, including the governance variables from Table 12 and our dependent variable, CEO compensation). The overall average salary plus bonus and total compensation are $3.8 million and $12.8 million, respectively (Column 1). In a cross-panel comparison, we observe that CEO salary plus bonus and total compensation are lower at firms whose boards are both conventionally and socially independent (Column 3) than at firms whose boards are conventionally independent but not conventionally and socially independent (Column 4). This observation is consistent with our conjecture that conventionally-and-socially independent boards are more effective at controlling agency issues than boards that are only conventionally independent. However, there are many other determinants of executive compensation for which we need to control.

A. Level of CEO compensation

To test the relevance of social ties, we estimate the following regression:

$$C_{i,t} = \alpha + \beta_1 BoardIndependence_{i,t} + X\beta_{2\text{-}19} + Year\ \beta_{20\text{-}28} + Industry\ \beta_{29\text{-}32} + \varepsilon_{i,t,}. \quad (1)$$

$C_{i,t}$, the dependent variable, is the level of compensation in millions for the CEO of firm *i* in year *t*. We use two different measures of compensation: *Base Salary* + *Bonus*, and *Total Compensation*, calculated as the sum of base salary, bonus, long-term incentive payouts, the value of restricted stock grants, and the Black-Scholes value of option grants converted into their stock equivalents using the options' median delta. *BOARD INDEPENDENCE*$_{i,t}$ is a dummy that equals one if the board of firm i is classified as independent (under the criteria in question), and zero otherwise. *X* is a set of the following control variables: *ln(Total Assets)*, *ln(MB)*, *ROA*, *RET*, σ^2, *CEO Equity Holdings*, *CEO Award*, *CEO=Chairman*, *CEO Tenure*, *ln(Board Size)*, *Old Directors*, *Busy Board*, *Directors' Equity Holdings*, *CEO from Other Company*, *Classified Board*, *Democracy Firm*, *Dictatorship Firm*, and *Family Firm*. Following Core, Holthausen, and Larcker (1999), we use lagged values of the economic determinants and contemporaneous values of the governance variables. However, to address potential timing concerns, we also estimate our regressions using lagged values of the governance variables and we obtain similar results (untabulated). To ensure that past performance is matched to the appropriate CEO, we exclude those firm-years in which there are new arrivals because past firm performance cannot be attributed to an incoming CEO. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$, and *Industry* denotes the industry dummies, $Industry_2$ through $Industry_5$, using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

The results, presented in Table 15, show a substantially stronger coefficient estimate when we replace the conventional measure of board independence (which does

not incorporate social ties) with our new measure. When we regress the CEO's salary plus bonus on the conventional board-independence dummy (Column 1), we obtain a coefficient estimate of -0.755 (*t*-statistic = -1.16). However, when we replace the conventional dummy with the new board-independence dummy (Column 2), we obtain a coefficient estimate of -0.780 (*t*-statistic = -2.31). This magnitude is also economically meaningful; the CEO's salary plus bonus decreases by roughly $0.8 million when a conventionally-and-socially independent board is present (average salary plus bonus is $3.8 million).

In Columns 3 and 4, we extend our analysis to the CEO's total compensation. When we regress total compensation on the conventional board-independence dummy (Column 3), we obtain a coefficient estimate of 0.572 (*t*-statistic = 0.24). However, when we replace the conventional dummy with the new board-independence dummy (Column 4), the coefficient estimate sharply increases in magnitude to -3.347 (*t*-statistic = -2.50). This translates to a total compensation decrease of roughly $3.3 million when the board is both conventionally and socially independent of the CEO (average total compensation is $12.8 million)

The new board-independence measure's greater association with compensation suggests that our proposed social ties are an important source of a director-CEO connection that affects the board's monitory capacity. Moreover, consistent with prior literature, the regression results indicate that the level of compensation is higher for CEOs of large firms, for CEOs of growth firms, for CEOs who have strong prior performance, when the CEO is also the chairman of the board, for CEOs whose boards include a higher proportion of old directors, and when at least one of the directors is the

CEO at another firm. Also consistent with prior literature, *CEO Equity Holdings* has a statistically significant (but economically insubstantial), negative relation with the level of compensation. Due to clustering, which oftentimes more than doubles OLS standard errors, many variables that otherwise would be (and may have been found to be) significant determinants of CEO compensation are no longer so once this adjustment is applied to account for time-series persistence.

As an additional test of the relevance of social ties, we examine the variation in compensation within the subset of firms with conventionally independent boards, which allows us to determine whether social ties have a significant contribution beyond that of conventional ties. Focusing on this subsample, we estimate the same regression as in Eq. (1), but, in place of the board-independence dummy, we use a $NOT\ INDEPENDENT_{i,t}$ dummy that equals one if the board (despite being conventionally independent) is not conventionally and socially independent, and zero otherwise. If social ties are irrelevant, then we expect no compensation differential attributed to this distinction. By focusing on firms with conventionally independent boards, we ensure that any compensation differential we observe is due to the extent of the directors' social ties to the CEO.

The results, presented in Table 16, show a significant difference in CEO compensation between the conventionally independent boards that are conventionally and socially independent, and those that are not. In Column 1, we observe that the CEO of a firm with a conventionally-but-not-conventionally-and-socially independent board receives a salary plus bonus that is \$0.6 million greater (*t*-statistic = 1.71) than that of his conventionally-and-socially independent counterpart, despite each board's conventionally independent status. In Column 2, we observe that this compensation differential extends

to the CEO's total compensation package; the CEO of a firm with a conventionally-but-not-conventionally-and-socially independent board receives a total compensation that is $4.1 million greater (*t*-statistic = 2.69) than that of his conventionally-and-socially independent counterpart. These results further signify the monitory importance of these social ties, because within the subsample of firms with conventionally independent boards, a compensation premium is awarded by firms whose boards' degree of social dependence rules out conventional-and-social independence.

B. Subsequent operating performance

The results thus far suggest that social ties affect the board's monitory effectiveness. However, there are alternative explanations for the higher level of compensation associated with having a board that is conventionally independent but not conventionally and socially independent. One possibility is that, when a CEO's job is more difficult or complex, he requires not only a higher level of compensation but also a board with a greater advisory role (i.e., perhaps a friendlier board). Thus, the compensation premium associated with social ties could reflect the firm's complexity as opposed to the board's decreased monitory capacity. A similar argument applies to a high-quality CEO, who has more freedom and bargaining power in the board selection process (Hermalin and Weisbach, 1998). Such a CEO could benignly desire more socially dependent directors, and receive a higher level of compensation due to his high quality.[25] Whether through facilitated expropriation, increased counsel, or CEOs' benign preferences for socially

[25] For example, a CEO from University X could view his alma mater as a signal of quality and may desire directors who hold degrees from University X with the intent to form a higher quality board (as opposed to a less independent one).

dependent directors, all of these possibilities highlight the relevance of these social ties. Our purpose now is to disentangle these competing interpretations.

Following Core, Holthausen, and Larcker (1999), we examine the relation between subsequent operating performance and the excess component of compensation attributed to having a board that is not conventionally and socially independent. If greater social dependence reflects either a high-quality CEO's preferences (other than to entrench himself) or a complex firm's advisory needs, then we expect to see no relation or perhaps a positive relation between subsequent performance and this excess component of compensation. To ensure that any relation we observe is due to the extent of the directors' social ties to the CEO, we focus our analysis on the subsample of firms with conventionally independent boards. Then, we estimate the following regression:

$$\overline{Performance}_{i,t+1,t+3} = \alpha + PredictedExcessCompensation_{i,t}\beta_{1-2} + X\beta_{3-5} + Year\beta_{6-14} + Industry\beta_{15-18} + \varepsilon_{i,t} \quad (2)$$

$\overline{Performance}_{i,t+1,t+3}$, the dependent variable, is the operating performance averaged over the subsequent one-, two-, or three-year period. We use three different measures of operating performance: return on assets (*ROA*), return on sales (*ROS*), and return on equity (*ROE*). *Predicted Excess Compensation*$_{i,t}$ consists of two variables: *Excess(NOT INDEPENDENT*$_{i,t}$*)*, the predicted excess compensation attributed to having a board that is not conventionally and socially independent (despite being conventionally independent); and *Excess(Other Governance Variables*$_{i,t}$*)*, the predicted excess compensation from the remaining governance variables: *CEO Equity Holdings*, *CEO=Chairman*, *ln(Board Size)*, *Old Directors*, *Busy Board*, *Directors' Equity Holdings*, *CEO from Other Company*, *Classified Board*, *Democracy Firm*, *Dictatorship Firm*, and *Family Firm*. Predicted excess components of total compensation are calculated using the coefficient estimates

reported in Table 16 and are scaled by total compensation. *X* is a set of the following control variables: *ln(Total Assets)*, *ln(MB)*, and σ^2. We use time-*t* values of *ln(Total Assets)* and σ^2, and we use time-(*t-1*) values of *ln(MB)* to avoid unduly capturing market expectations of upcoming earnings as opposed to expectations of growth opportunities. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$, and *Industry* denotes the industry dummies, $Industry_2$ through $Industry_5$, using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

The results, presented in Table 17, show a significantly negative relation between subsequent operating performance and the excess compensation attributed to having a board that is not conventionally and socially independent. To gauge the economic importance, consider a one standard deviation increase (0.418) in *Excess(NOT INDEPENDENT*$_{i,t}$*)*. For the one-year performance measures, such an increase is associated with a 0.4% decrease in *ROA* (*t*-statistic = -1.89), a 0.5% decrease in *ROS* (t-statistic = -1.72), and a 0.8% decrease in *ROE* (*t*-statistic = -2.61). For the two-year measures, such an increase is associated with average, annual decreases of 0.5% in *ROA* (*t*-statistic = -2.10), 0.5% in *ROS* (*t*-statistic = -1.86), and 0.8% in *ROE* (*t*-statistic = -2.54). For the three-year measures, such an increase is associated with average, annual decreases of 0.4% in *ROA* (*t*-statistic = -2.46), 0.5% in *ROS* (t-statistic = -2.24), and 0.7% in *ROE* (*t*-statistic = -2.08).

Because all of these firms have conventionally independent boards, the negative associations that we find are explicitly due to the extent of social ties to the CEO. These results further punctuate the monitory and disciplinary importance of social ties, because

neither the advisory needs of a complex firm nor the innocent social preferences of a high-quality CEO can explain this negative association between subsequent operating performance and the excess compensation attributed to having a board that is not conventionally and socially independent.

C. Other channels of monitoring

We now examine the role of social ties in other supervisory and disciplinary duties of the board. In particular, we study the effect of social ties on pay-performance elasticity, CEO turnover, and earnings management. To ensure that any relation we observe is due to the extent of the directors' social ties to the CEO, we focus our analyses on the subsample of firms with conventionally independent boards.

C.1. Board independence and pay-performance elasticity

Here, we examine the role of social ties in the CEO's pay-performance relation. Jensen and Murphy (1990) and Murphy (1999) argue that the relation between CEO pay and performance (i.e., the change in shareholder wealth) is weak. One explanation is that lack of oversight leads to compensation plans in which interests are not adequately aligned between shareholders and risk-averse, self-interested CEOs. If social ties do not exacerbate this conflict, then we expect no difference in the pay-performance relation attributed to the extent of the board's social ties to the CEO.

Within the subsample of firms with conventionally independent boards, we regress the percentage change in CEO compensation on $RET_{i,t}$, $RET_{i,t}$ x *NOT INDEPENDENT*$_{i,t}$, and *INTERACT*, which consists of various other interaction terms.

NOT INDEPENDENT$_{i,t}$ is a dummy that equals one if the board (despite being conventionally independent) is not conventionally and socially independent, and zero otherwise. *INTERACT* is a set of interaction terms in which $RET_{i,t}$ is interacted with each of the following variables: *CEO Award*, *CEO=Chairman*, *CEO Tenure*, *ln(Board Size)*, *Old Directors*, *Busy Board*, *Directors Equity Holdings*, *CEO from Other Company*, *Classified Board*, *Democracy Firm*, *Dictatorship Firm*, *Family Firm*, and σ^2. In accordance with previous studies, we use contemporaneous values of all independent variables. We include year and industry dummies, and all *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

We interact $RET_{i,t}$ with σ^2 because, consistent with the predictions of the principal-agent model, Aggarwal and Samwick (1999) find that pay-performance sensitivity decreases in stock return volatility. The remaining interactions are with variables that proxy a CEO's clout with his board or lack of director oversight, which we expect to lessen the relation between pay and performance. Finally, in regressing the percentage change in pay on the percentage change in shareholder wealth, we estimate pay-performance elasticity as opposed to pay-performance sensitivity, which examines the dollar change in pay with respect to the dollar change in shareholder wealth (Murphy, 1999). We opt to estimate pay-performance elasticity because, in doing so, we obtain greater explanatory power of our dependent variable. However, we obtain similar results when we estimate pay-performance sensitivity (untabulated).

The results, presented in Table 18, show a significant difference in pay-performance elasticity within the subsample of firms with conventionally independent boards. Consistent with prior literature, we observe a significantly positive relation

between the percentage change in compensation and the percentage change in shareholder wealth (Columns 1 and 3). However, the CEO of a firm with a conventionally-but-not-conventionally-and-socially independent board receives a total compensation package that is 0.510 less elastic with respect to performance (*t*-statistic = -1.91) than that of his conventionally-and-socially independent counterpart (Column 4). In other words, for a 20% decrease in stock returns, the CEO of a firm with a conventionally-but-not-conventionally-and-socially independent board has a total compensation package that decreases by 10.2% less than that of an otherwise equivalent CEO of a firm with a conventionally-and-socially independent board. Ultimately, firms with conventionally-and-socially independent boards exhibit, on average, an 18% decrease in the CEO's total compensation for a 20% decrease in shareholder wealth (untabulated).

C.2. Board independence and CEO turnover

Here, we examine the role of social ties in the CEO's turnover-performance sensitivity. CEO turnover is another area in which social ties potentially hinder the board from acting in shareholders' best interests. Board consultants in the popular press broach this issue, saying that when directors debate whether or how to fire a CEO, "they [the directors] typically need the most help in dealing with their attachment to the CEO" (Business Week, 2007), and academic studies find weaker sensitivity of turnover to performance with the presence of factors indicating that the board is beholden to the CEO (e.g., Weisbach, 1988; Yermack, 1996; and Faleye, 2007). If social ties do not cloud objective

disciplining, then we expect no difference in turnover-performance sensitivity attributed to the extent of the board's social ties to the CEO.

Within the subsample of firms with conventionally independent boards, we use the logistic function to estimate a binary response model of the $Turnover_{i,t}$ indicator on $RET_{i,t-1}$, $RET_{i,t-1}$ x $NOT\ INDEPENDENT_{i,t-1}$, and $NOT\ INDEPENDENT_{i,t-1}$, as well as *INTERACT*, which consists of various other interaction terms, and *X*, which consists of various controls. $Turnover_{i,t}$ is a dummy that equals one if a CEO turnover occurs at firm *i* in year *t*, and zero otherwise. $NOT\ INDEPENDENT_{i,t-1}$ is a dummy that equals one if in year *t-1* the board (despite being conventionally independent) is not conventionally and socially independent, and zero otherwise. The set *X* consists of the following variables: *CEO Award*, *CEO=Chairman*, *CEO Tenure*, *ln(Board Size)*, *Old Directors*, *Busy Board*, *Directors Equity Holdings*, *CEO from Other Company*, *Classified Board*, *Democracy Firm*, *Dictatorship Firm*, and *Family Firm*, which proxy a CEO's clout with his board or lack of director oversight, as well as *CEO Age*, which serves to distinguish voluntary retirements from involuntary departures (as does *CEO Tenure*). Departures of mature CEOs with long tenure are more likely to be voluntary (Murphy, 1999). *INTERACT* is a set of interaction terms in which $RET_{i,t-1}$ is interacted with each of the variables in *X*, except for *CEO Age*. In accordance with previous studies, we use lagged values of all independent variables. Because this regression involves lagged board-structure variables, which are unavailable in 1995, we begin our analysis in 1997. We include year and industry dummies, and all *p*-values account for clustering (by firm).

The results, presented in Table 19, show a significant difference in the probability of a CEO turnover within the subsample of firms with conventionally independent

boards; all else equal, the probability of turnover decreases, on average, by 3.7% for firms with boards that are conventionally independent but not conventionally and socially independent (p-value = 0.09). Moreover, we observe a suggestive difference in turnover-performance sensitivity attributed to this distinction. The CEO of a firm with a conventionally-but-not-conventionally-and-socially independent board is less likely to be terminated based on poor performance (p-value = 0.18) than his conventionally-and-socially independent counterpart. For a one standard-deviation decrease (from the mean) in returns, the probability of turnover increases by roughly 3.2% less when the board is not conventionally and socially independent.

C.3. Audit-committee independence and CEO bonus

Here, we examine the role of social ties in the audit committee's oversight responsibilities. The audit committee's function is to oversee the integrity of the firm's financial statements, of which accounting earnings are the primary determinant of the CEO's bonus (Murphy, 1999). There is evidence that managers attempt to manipulate earnings to maximize their bonuses (Healy, 1985), and related studies suggest that the level of earnings manipulation is a function of the firm's governance and ownership structure (e.g., Dechow, Sloan, and Sweeney, 1996; and Warfield, Wild, and Wild, 1995). In particular, Klein (2002) argues that firms with independent audit committees engage in less earnings management. If social ties do not cloud objective monitoring, then we expect no bonus differential (and thus no difference in earnings manipulation) attributed to the presence of social ties between the CEO and members of the audit committee.

Within the subsample of firms whose audit committees consist entirely of conventionally independent directors, we regress the CEO's bonus (in millions) on a $NOT\ INDEPENDENT_{i,t}$ dummy, the CEO's total compensation minus his bonus, and the same set of controls, X, as in regression Eq. (1). $NOT\ INDEPENDENT_{i,t}$ is a dummy that equals one if the audit committee (despite consisting entirely of conventionally independent directors) has one or more directors who are socially dependent to the CEO, and zero otherwise. Because this regression involves audit committee data (which are not available until after 1997), we begin our analysis in 1998. We control for the CEO's total compensation (minus bonus), because the CEO's bonus is positively associated with his overall level of compensation and audit committee independence is positively associated with board independence. We include year and industry dummies, and all *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

The results, presented in Table 20, show a significant bonus differential within the subsample of firms with conventionally independent audit committees. On average, the CEO of a firm with a conventionally-but-not-conventionally-and-socially independent audit committee receives a bonus that is \$0.734 million greater (*t*-statistic = 1.75) than that of his conventionally-and-socially independent counterpart (average CEO bonus is \$2.6 million), thereby lending support to the monitory relevance of social ties in the audit committee's supervision of the firm's financial statements. This bonus premium is not a by-product of our earlier compensation results, because we control for the CEO's overall compensation. We obtain similar results when we control for base salary in place of total compensation (untabulated), with a coefficient estimate of 0.813 (*t*-statistic = 1.95).

D. Additional analyses

To ensure that our results are not sensitive to alternative specifications, we now examine various board-independence classifications and alternative regression specifications. All untabulated analyses are available upon request.

D.1. Alternative classifications of conventionally-and-socially independent boards

In Table 21, we present the results from a range of sensitivity tests of alternative, independence classifications. As in Table 15, we estimate regression Eq. (1) using two different measures of compensation: *Salary + Bonus* (Panel A) and *Total Compensation* (Panel B), and all *t*-statistics are calculated using White standard errors adjusted for clustering (by firm). In Columns 1 through 3, we present the results from using a board-independence dummy, whereby, in Column 1, we require that a 50% majority of directors be independent; in Column 2, we require that a 60% majority of directors be independent; and in Column 3, we require that all members of the compensation committee be independent. In regressions using the 60% cutoff, we also include a mixed-board dummy that equals one if the percentage of independent directors is between 40% and 60%, and zero otherwise. Moreover, for regressions involving compensation committee information, our analyses begin in 1998 in accordance with data availability. In Column 4, we present the results from using the fraction of independent directors (as opposed to an independence dummy). Finally, in Column 5, we present the results from using the board's average number of ties per director, which we calculate by dividing the total number of director-CEO ties (with a maximum of seven per director) by the number of directors for that firm-year. In contrast to the other measures (including the independence

fraction), which categorize directors in dichotomous terms, this last measure allows us a finer metric to define the extent of a director's dependence to the CEO. For each of these measures of board independence, we present the results from using two different specifications of director independence. In the first row, we consider only the conventional ties, and in the second row, we augment the conventional criteria with our social criteria.

We find that our earlier results are robust to different board-independence cutoffs, to the use of an independence fraction instead of a dummy, and to the use of an average-ties measure. Across our various specifications of board independence, the coefficient estimates on the conventional-and-social independence measures (Row 2) are both economically meaningful and statistically significant. Moreover, we observe similarly significant results when we redefine regional ties by a finer state-wise classification (untabulated). In comparison, the coefficient estimates on the conventional-independence measures (Row 1) are substantially smaller in economic and statistical significance.

Using these alternative specifications, we also replicate Table 16 (which provides a clearer picture of the monitory relevance of social ties beyond that of conventional ties because we examine the variation in compensation within the subsample of firms with conventionally independence boards), and we obtain even stronger results (untabulated).

D.2. Additional sensitivity tests

In additional tests (untabulated), we include an outside blockholder dummy as a control variable, because an outside blockholder has increased supervisory incentives due to his large stake in the firm. An outside blockholder is a shareholder who has at least 5%

ownership in the firm and is not an officer, a director, an affiliated entity, or otherwise employed by the firm. The board-independence coefficient estimates are equal in magnitude to those obtained in our original regressions, but, because the blockholder database ends in 2001, our sample size sharply decreases to 350 observations with the inclusion of this variable, thereby increasing the standard errors of the board-independence coefficient estimates (resulting in *t*-statistics of -1.86 and -1.65, respectively, when using the *Salary + Bonus* and *Total Compensation* measures). As always, we use White standard errors adjusted for clustering by firm. Whether the outside blockholder dummy is included or not, compensation regressions within this reduced sample (of 350 observations) yield very similar board-independence coefficient estimates and standard errors.

Furthermore, our results continue to hold under the following alternative specifications of our empirical tests (untabulated): calculating total compensation using the Black-Scholes value of options instead of converting them into their stock equivalents; estimating quantile regressions to reduce the influence of potential outliers; including the CEO's first-year level of compensation as an additional control for CEO quality; adding squared values of our independent variables to capture possible nonlinearities; adjusting variables by the industry median (as opposed to adjusting by the mean); including an *Other Provisions* index in place of the *Democracy* and *Dictatorship* dummies (the *Other Provisions* index is equal to the GIM index minus one if the firm has a classified-board provision, and minus zero otherwise); and including the Bebchuk, Cohen, and Ferrell (2004) index in place of the *Classified-Board*, *Democracy*, and *Dictatorship* dummies (the BCF index accrues one point for each of the following

provisions: classified board, poison pill, golden parachute, limits to bylaw amendments, supermajority requirements for charter amendments, and supermajority requirements for mergers).

D.3. Missing data

Social ties are indeterminate for some directors due to missing data points. We have 81.2% coverage in terms of educational institution, 66.8% coverage in terms of regional origin, 57.8% coverage in terms of discipline, and 96.1% coverage in terms of industry. Because military service is a noteworthy career point, we assume that a blank military service field indicates that the director or CEO in question simply did not serve in the military. Overall, we have at least one social ties data point for 98.4% of directors, we have at least two data points for 82.3% of directors, and we have at least three data points for 76.2% of directors.

Directors who are missing data along our social criteria, by default, are not linked socially to the CEO. One possible concern, then, is that the missing data share a systematic component, resulting in a spurious correlation between social ties and CEO compensation. To the contrary, we find that our coverage rates are not significantly related to firm size, market-to-book, or the various governance variables (nor do they vary significantly across industries), suggesting that the missing social ties data are missing at random.

To further ensure that our results are not driven by the missing data, we re-estimate regression Eq. (1) (untabulated), this time separating the (conventionally and socially) independent directors into two categories: those who have low coverage (less

than two data points) in terms of social ties data, and those who have high coverage (at least three data points). Unless the missing data share a systematic component associated with lower CEO compensation, we expect a weaker relation between compensation and low-coverage independent directors than between compensation and high-coverage independent directors (because independent directors with lower data coverage are less certain to be truly independent than those with higher data coverage). Consistent with this notion, we find that in a regression of *Salary* + *Bonus* on the low- and high-coverage independence fractions, the high-coverage coefficient estimate is stronger, both in magnitude and statistical significance, than the low-coverage coefficient estimate. We make similar observations when we regress *Total Compensation* on the low- and high-coverage independence fractions, and in both cases, only the high-coverage coefficient estimates are reliably different from zero. Moreover, we make similar observations under different cutoffs of high versus low data coverage. The stronger association between CEO compensation and the high-coverage independent directors substantiates that our results are not driven by the missing social ties data, and provides further evidence that our proposed measures contribute to a decline in monitory and disciplinary effectiveness.

5. Contribution and discussion

Our paper contributes to the governance literature in the following ways. First, we propose a measure of social ties between directors and their CEOs, and we provide evidence of its practical applicability. In contrast to the survey-based measures generally employed by studies pertaining to social embeddedness (e.g., Uzzi, 1996, 1999; Westphal, 1999; Ingram and Roberts, 2000; McDonald and Westphal, 2003; and

Westphal, Boivie, and Chng, 2006), our measure is based on several broadly available characteristics. In this respect, our measure is similar to that of Cohen, Frazzini, and Malloy (2008), who study the effects of social ties between mutual fund managers and corporate officers or directors via mutual alma mater.[26] We add to their measure by suggesting that it is not only a shared educational institution that contributes to a mutual affinity, but also shared military service, regional origin, discipline, and industry.

Moreover, we are the first to examine whether social ties affect a director's monitory and disciplinary effectiveness (above and beyond any effect that the conventional ties may have) and whether boards that are currently (i.e., conventionally) classified as independent are essentially so. Thus, the evidence presented in this paper is relevant to the many academic studies examining the monitory benefits of independent boards (e.g., Weisbach, 1988; Byrd and Hickman, 1992; Brickley, Coles, and Terry, 1994; Cotter, Shivdasani, and Zenner 1997; Mayers, Shivdasani, and Smith, 1997; and Paul, 2007), because our findings suggest that a board's independent mindedness depends not only on conventional ties to the CEO, but also on our proposed social ties. We specifically contribute to the executive compensation, CEO turnover, and earnings management literatures as follows:

Executive Compensation. Studies examining the relation between board composition and executive compensation include Mehran (1995); Westphal and Zajac

[26] In a digressive (but related) vein, some studies use various demographics, such as age, insider versus outsider status (i.e., whether the director is an employee of the firm), and level of formal education to capture similarities in strategic decision making (e.g., Wally and Baum, 1994; Westphal and Zajac, 1995; Papadakis, Lioukas, and Chambers, 1998). For instance, they argue that risk tolerance decreases with age, that cognitive ability increases with the level of formal education, and that outsiders could be "more likely to recognize opportunities for change" whereas insiders "tend to favor the status quo" (p. 64).

(1995), Yermack (1996), Hallock (1997), Core, Holthausen, and Larcker (1999), Larcker, Richardson, Seary, and Tuna (2005), and Faleye (2007), who find that executive compensation is higher and is less sensitive to performance in the presence of certain structural measures indicating weaker governance, as well as when directors and CEOs have similar perspectives on corporate strategy. We add to this literature by providing evidence that social ties contribute, beyond any impact that conventional ties may have, to both the level and composition of compensation. We find that conventionally independent boards have a substantially weaker, negative relation with executive compensation than boards that are both conventionally and socially independent. Moreover, we find that pay-performance elasticity is substantially weaker when boards are not both conventionally and socially independent of the CEO, further suggesting that conventional measures of independence do not fully capture a board's monitory effectiveness.

CEO Turnover. We also contribute to the literature examining the sensitivity of turnover to performance in the presence of factors indicating that the board is beholden to the CEO (e.g., Weisbach, 1988; Yermack, 1996; and Faleye, 2007) by providing suggestive evidence that social ties contribute to weaker turnover-performance sensitivity. Within the subsample of firms with conventionally independent boards, the probability of a CEO turnover is less sensitive to performance at firms with boards with that are not conventionally and socially independent (though not at a statistically significant level).

Earnings Management. Finally, we contribute to the literature examining the association between governance and earnings management (e.g., Dechow, Sloan, and

Sweeney, 1996; and Klein, 2002). We contend that it is not only managerial stock holdings (Warfield, Wild, and Wild, 1995) or conventionally independent audit committees (Klein, 2002) that contribute to less earnings manipulation, but also the absence of social ties. Focusing on the subsample of firms whose audit committees consist entirely of conventionally independent directors, we find a significantly higher level of bonus associated with the presence of audit committee social ties to the CEO, providing suggestive evidence that even if audit committees are wholly conventionally independent, social ties allow CEOs to influence earnings in order to increase their bonuses.

6. Conclusion

Directors are not dispassionate. It is not only financial and familial ties that interfere with their disciplinary and monitory roles; social ties also matter. Here, we propose several observable characteristics that likely connect a director (socially) to the CEO: mutual alma mater, military service, regional origin, discipline, and industry. We augment the conventional definition of board independence with these additional social restrictions and find that the percentage of independent boards in our sample drops from 87% to 62%. Moreover, we provide evidence that CEOs select directors along these social dimensions and that these social ties have a significant impact on directors' monitory and disciplinary effectiveness. Thus, we conclude that social ties compromise arms-length contracting and, as such, are relevant to the classification of independent directors.

Third Essay: Earnings Management and Social Ties

1. Introduction

Audit committees play a crucial role in overseeing the integrity of a firm's financial statements (Levitt, 2000). At the heart of its execution is whether the committee is composed of directors who are independent-minded with respect to the CEO. The 1999 amendments to the NYSE and NASDAQ listing standards specify that audit committees be composed entirely of independent directors, and the Sarbanes-Oxley Act of 2002 solidifies this mandate.[27] Moreover, empirical evidence supports the regulatory changes' underlying assertion that independent directors enhance the financial reporting system (e.g., Carcello and Neal, 2000; Carcello and Neal, 2003; Klein, 2002). However, the question remains as to what constitutes an independent-minded director.

Current regulations stipulate that financial and familial ties to the CEO or to the firm preclude independence. The Investor Responsibility Research Center (IRRC) classifies a board member as affiliated if he/she is a current or former employee, a relative of an executive officer, a customer of or a supplier to the firm, a provider of professional services, a recipient of charitable funds, or interlocked with an executive of the firm,[28] and the listing markets specify similar restrictions for what constitutes (or disallows) an independent director. Absent from these guidelines, however, are social ties

[27] The 1999 amendments allowed each firm some discretion in ultimately determining the independence of a potential committee member. Sarbanes Oxley dampened this loophole by granting the SEC (and not the firm's board) the discretion to overrule independence criteria on a case-by-case basis. See Klein (2003) for details.

[28] This list also includes a catchall phrase for any other type of affiliation that poses a potential conflict of interest, but the scope of this final catchall is limited to (voluntary) proxy disclosures.

(i.e., the non-familial, informal ties), which play a significant role in setting the normative expectations governing group dynamics (Mills and Clark, 1982; Uzzi, 1996). Our purpose is to examine the role of social ties in audit committees' execution of oversight responsibilities and in the practice of earnings management, in particular.

Using hand-collected data, we focus on a sample of 956 firm-years consisting of the publicly traded Fortune 100 firms from 1996 to 2005, and drawing from the economics and sociology literatures, we employ mutual alma mater, military service, regional origin, discipline, and industry (as well as third-party connections based on these ties) as indications of an informal tie between a director and the CEO. Whether it is conscious or not, these shared characteristics and experiences ease communication and facilitate mutual understanding, thereby fostering personal connections (Marsden, 1987; McPherson, Smith-Lovin, and Cook, 2001). Thus, we hypothesize that these shared qualities, through homophily (i.e., an affinity for similar others), adversely influence a director's ability to question or to voice unfavorable positions of the CEO. The popular press broaches this issue, saying that shared characteristics and experiences with the CEO have the potential to sway a director's judgment (*New York Times*, 2005).

To measure the extent of an audit committee's partiality to the CEO, we calculate an affiliation index, taking the average number of ties (per committee member) to the CEO. For our purposes, we compare two different indices: a conventional index, which considers only the financial and familial connections, and a conventional-and-social index, which in addition, considers the aforementioned social connections.

We observe a significant presence of these shared qualities between audit-committee members and the CEO, and our results suggest that these informal ties play a

material role in facilitating creative accounting practices. We find a stronger, positive relation between abnormal (i.e., discretionary) accruals and the extent of an audit committee's connection to the CEO when we consider social ties in addition to the conventional ties. Similarly, we find that an audit committee's social affiliation is associated with an increased discontinuity in the earnings distribution surrounding earnings targets. Moreover, we provide evidence that the increased earnings management associated with an audit committee's social affiliation contributes to higher CEO bonuses, suggesting one channel through which CEOs (tangibly) benefit from informal ties with committee members. Finally, we provide evidence of some of the economic byproducts of regulation. The Sarbanes-Oxley Act of 2002 imposed stricter independence criteria on audit committees, resulting in a general decrease in audit committees' conventional affiliation to the CEO. However, of the firms whose audit committees lost conventionally affiliated members, 11% appointed socially affiliated replacements. Moreover, in the post Sarbanes Oxley period, the firms appointing socially affiliated replacements manage earnings more than those that do not, suggesting the growing importance of social ties as an alternate, unregulated attempt by which CEOs capture the financial reporting process.

This paper is organized as follows. In Section 2, we discuss the significance and measurement of social ties. In Section 3, we describe our data sources, variables, and summary statistics. In Section 4, we examine the role of social ties in the level of earnings management and the accompanying CEO benefits. In Section 5, we conclude.

2. Motivation, Identification, and Hypotheses

A. Significance of Social Ties

Social ties foster favorable interpretations of one another (Uzzi, 1996) and effect a shift from dispassionate reciprocation to mutual caring and trust (Mills and Clark, 1982; Silver, 1990). For example, Uzzi (1996) observes that when buyers and manufacturers share social ties, buyers are more likely to accept fabric mistakes rather than refuse the material at the manufacturer's cost. Thus, when a director and CEO share a personal connection, the director's resulting partiality impedes objective monitoring of the CEO. Consistent with this supposition, Hwang and Kim (2009) find that social ties between CEOs and directors are associated with higher levels of compensation and bonus, lower pay-performance sensitivity, and lower turnover-performance sensitivity.

Other studies pertaining to social embededdness include Uzzi (1999), who finds that social ties between middle-market firms and their lenders affect "both who gets credit and what that credit costs"; Ingram and Roberts (2000), who find that there is greater collaboration, greater information exchange, and less "aggressive competitive behavior" among competing hotel managers who share social ties; Westphal, Boivie, and Chng (2006), who provide evidence that management form social ties with managers of other firms "in order to manage uncertainty arising from resource dependence"; and Cohen, Frazzini, and Malloy (2007, 2008), who find that mutual-fund managers and sell-side equity analysts enjoy an informational advantage via their social-network connections with executives and directors.

B. Hypothesis Development

Amid self-serving managers and conflicting financial incentives, audit committees are charged with overseeing the integrity of the financial-reporting process. Independent directors are better-suited to complete this directive since they are more likely to objectively monitor and discipline the CEO (Fama and Jensen, 1983).[29] Given the growing evidence arguing the importance of social ties to the normative expectations guiding interpersonal actions, we project that it is not only conventional (i.e., financial and familial) ties but also social ties that affect an audit committee's objectivity, thereby providing the CEO more latitude in managing earnings. Thus, we examine the differential association between the extent of an audit-committee's affiliation to the CEO and the level of earnings management (which we measure with abnormal accruals) when we augment the potential conventional affiliations with the additional social affiliations. If social ties do not facilitate earnings management, then there should be no differential relation attributed to their inclusion.

C. Measurement/Identification of Social Ties

Following Cohen et al. (2007, 2008) and Hwang and Kim (2009), we operationalize social ties through shared qualities and experiences. Actors enjoy comfort and mutual understanding with others who share similar characteristics and experiences (Marsden, 1987; McPherson et al., 2001), and "contact between similar people occurs at a higher

[29] Studies focusing on the advisory role of directors argue the merits of a less independent board (e.g., Adams and Ferreira, 2007; Coles, Daniel, and Naveen, 2007; Linck, Netter, and Yang, 2007). However, because the audit committee's role is a monitory one, the possible advisory benefits of *dependent* directors do not extend to (shareholder) benefits in terms of audit-committee functions.

rate than among dissimilar people" (McPherson et al., 2001). Thus, these mutual backgrounds, through homophily (the principle that "birds of a feather flock together"), facilitate interactions and thereby foster personal connections. In contrast to a survey-based approach, our approach allows for the conscious as well as the subconscious personal connections between directors and their CEOs. Moreover, mutual qualities and experiences, such as alma mater and past military experience, have the appealing feature of being systematically available and relatively easy to identify. We employ the following measures as in Hwang and Kim (2009):

Alma Mater. University alumni enjoy enhanced interaction via shared traditions and in-jokes, and the college sports events, alumni networks, donations, and newsletters solidify their sense of group belonging. In our classification scheme, mutual alma mater alone does not constitute a school tie between a director and CEO. We also require that they be no more than three years apart in age, since an overlapping period of attendance starkly increases similarities in experiences.

Military Service. Connections forged between veterans are facilitated through unique shared experiences and a pronounced sense of group identity. Military service is marked by an environment "that depends on a highly structured, organized force" and there is "a demand not paralleled in any other work environment", contributing to a steadfast bond among veterans (Crosse and Hocking, 2004; Friedman, 2005).

Academic Discipline and Industry. Mutual industry and academic discipline provide further opportunities for contact and signify additional similarities (which also go beyond the accompanying interests and common experiences, since they are endogenously selected). To determine mutual industry and discipline, we partition

industries of primary employment using the Fama-French (1997) 49-industry classification, and we partition academic majors into 26 categories using the US News Rankings report. Please refer to Appendix E for a full list of academic disciplines.

Regional Origin. Within the US (as well as across countries), there is a regional clustering of dialect, beliefs, culture, and lifestyle. "[Americans] think of themselves as linked geographically by certain traits" (U.S. Department of State, 2003), and there is a marked distinction in cross-regional leisure-time activities(Marsden, Reed, Kennedy, and Stinson, 1982), which contributes to an affinity for others from the same locale. For example, the regional homogeneity in the social choices of college students exceeds what is expected if social circles are formed randomly with respect to regional origin (Reed, 2003). We define regional origin as the US region (or non-US country) of birth, because unlike the more abstract concept of *home*, birthplace is clearly defined and systematically available. Moreover, from 1995 to 2000, only 4.6% of nationals changed their region of residency (U.S. Census Bureau, 2003), indicating that birthplace is strongly associated with this vaguer notion of home. In accordance with the theoretical and empirical groundwork on regional homophily, we focus on broader regional categories, and we cluster US states and territories into the following regions: South, Northeast, Midwest, Mountain, Pacific, and Territories.[30]

Third Party. A mutual third-party connection enhances a bond by strengthening shared normative expectations (Granovetter, 2005) and facilitating further contact. In determining third-party connections, we follow Hwang and Kim (2009) and allow a director and CEO to be connected via a third party to whom each shares at least two,

[30] Details are available from the U.S. Census Bureau at http://www.census.gov/geo/www/us_regdiv.pdf

direct ties (i.e., friend of a friend). For example, suppose that the CEO is a military veteran born in the Midwest, and director A is a 55-year-old, Berkeley-educated, electrical-engineering major born in the South. Although director A is not (directly) connected to the CEO, if there is a third-party director B who is 57 years old, graduated from Berkeley (where he studied electrical engineering), served in the military, and was born in the Midwest, then director A shares a third-party tie with the CEO.

3. Data Description

In this section, we describe our data sources, we define and discuss our regression variables, and we present summary statistics.

A. Sources

We focus on the publicly traded Fortune 100 firms (as declared in 1996 and 2005) and obtain a list of these Fortune 100 directors and CEOs from the IRRC and Compustat Executive Compensation databases. Our sample period runs from 1996 to 2005 and was determined by that of the the IRRC Directors database. Although this database begins in 1996, information on audit-committee membership is not available until 1998. Thus, we collect audit-committee memberships from annual proxy statements for the years 1996 and 1997.

We hand-collect data for each CEO's and director's education, academic discipline, military service, and regional origin from the Marquis Who's Who database. To determine each director's industry of employment, we first exploit the 'Primary Employment' field provided by the IRRC Directors database. For the remaining director-

years with a blank 'Primary Employment' field, we collect this information from the Marquis Who's Who and NNDB databases. Next, we match each of these firms to an SIC code (we create a separate category for retired directors), and we use the Fama-French (1997) 49-industry classification to define industry ties. For publicly-traded firms, we obtain the corresponding SIC code through CRSP, and for the remaining firms, we determine SIC codes using a combination of the Manta, Websters Online, Goliath, Alacra Store, American Hospital Directory, Law Firm Directory, Martindale-Hubbell, and HG.org databases. Furthermore, we collect CEO-award information from the Business Week archives, and we collect information on family-run firms from a combination of Family Business, proxy disclosures, the Compustat Executive Compensation database, the IRRC Directors database, and the Blockholders database. We obtain financial-statement, stock-price, and analyst-forecast data from the Compustat, CRSP, and IBES databases, respectively. Our final sample consists of 956 firm-years (226 CEOs and 2,292 directors, of which 1,164 serve as audit-committee members at one point).

B. Regression Variables

Here, we discuss our measures of earnings management and audit-committee affiliation as well as our other regression variables.

B.1. Earnings Management

As our main measure of earnings management, we use a cross-sectional variant of the Jones (1991) model to estimate the discretionary component of accruals (other studies following this approach include Teoh, Welch, and Wong, 1998a; 1998b; Xie, 2001;

Klein, 2002; and Yu, 2008). Then following Kothari, Leone, and Wasley (2005), we apply an adjustment to account for the predictable, performance-related component in discretionary-accruals estimates.

We begin by forming industry-year clusters of all COMPUSTAT firms using two-digit SIC codes. Then, for each industry-year cluster (*j*, *t*) with at least eight firms, we estimate the following firm-level regression for all firms *i* in industry *j* in year *t*:

$$\frac{ACCR_{i,j,t}}{TA_{i,j,t-1}} = \alpha_{0\,j,t} + \alpha_{j,t}\left[\frac{1}{TA_{i,j,t-1}}\right] + \beta_{j,t}\left[\frac{\Delta REV_{i,j,t}}{TA_{i,j,t-1}}\right] + \gamma_{j,t}\left[\frac{PPE_{i,j,t}}{TA_{i,j,t-1}}\right] + \varepsilon_{i,j,t}\,, \tag{1}$$

in which *ACCR* represents total accruals (i.e., net income before extraordinary items minus net cash flow from operating activities), *TA* represents total assets, Δ*REV* is the change in net sales, and *PPE* is gross property, plant and equipment.[31]

Using the residuals, $\hat{\varepsilon}_{i,j,t}$, from (1), we calculate performance-adjusted abnormal accruals, $AAC_{i,j,t}$, by matching each firm-year observation with another firm in year *t* in the same industry *j* with the closest current return-on-assets (*ROA*) :

$$AAC_{i,j,t} = \hat{\varepsilon}_{i,j,t} - \hat{\varepsilon}_{MATCH,i,j,t}\,. \tag{2}$$

In our analyses, we use the absolute value of abnormal accruals, because we are interested in the extent of earnings-management activity itself, without regard to the direction in which earnings are managed. That is, we are interested in realizations of positive abnormal accruals as well as negative abnormal accruals, which may reflect the eventual unwinding of prior upward managing activity or the active downward managing attempts to mitigate future poor performance. Moreover, our sample consists of a panel spanning a ten-year period, and earnings cannot be consistently managed in a single

[31] We follow Kothari et al. (2005) in including a constant in regression Eq. (1) to further mitigate heteroskedasticity issues.

direction. Other studies using unsigned discretionary accruals include Warfield, Wild, and Wild (1995), Klein (2002), Bergstresser and Philippon (2006), and Yu (2008).

As an alternate test for earnings management, we examine the likelihood of narrowly meeting as opposed to narrowly missing earnings thresholds (Burgstahler and Dichev, 1997; Healy and Wahlen, 1999; DeGeorge, Patel, and Zeckhauser, 1999; Yu, 2008). Managers have incentives to meet earnings benchmarks, and accordingly, a disproportionately large fraction of reported earnings either exactly meet or narrowly beat targets (Burgstahler and Dichev, 1997; DeGeorge et al., 1999). One disadvantage to this approach is that it does not allow for firm-specific variation in the extent of earnings-management activity. Nonetheless, this method does not require estimating discretionary accruals, and has the added advantage of being able to detect not only earnings management by creative accounting practices, but also earnings management by real decisions (e.g., foregone maintenance or research and development) that may not be reflected in estimated abnormal accruals (Healy and Wahlen, 1999).

B.2. Audit-Committee Affiliation Index

To measure the extent of an audit committee's partiality to the CEO, we calculate an affiliation index taking the average number of ties (between the CEO and each committee member) contributing to a director's sympathy for the CEO. For instance, if there are three committee members sharing one, two, and three ties, respectively, with the CEO, then the resulting affiliation index equals two. In constructing our index, we assume that all ties contribute equally to a director's partiality to the CEO. Although a more sophisticated measure might reflect the relative importance of different ties, our equal-

weighted measure has the advantage of being simple, transparent, and independent of subjective judgment. In our analyses, we compare two different indices: a conventional index, which considers only the conventional ties (as specified by the IRRC), and a conventional-and-social index, which considers both conventional and social ties.

Conventional Affiliation Index. The conventional index considers only the conventional ties (with a maximum of eight ties per director), accruing points whenever a committee member is a current employee, a former employee, an employee of a recipient of charitable contributions, a customer of or supplier to the firm (or an employee thereof), a provider of professional services to the firm (or an employee thereof), a relative of an executive officer, part of an interlocking directorate (i.e., an executive at firm X is a director at firm Y at the same time that an executive of firm Y is a director at firm X), or affiliated in some other manner.[32]

Conventional-and-Social Affiliation Index. The conventional-and-social index considers both conventional and social ties (with a maximum of 14 ties per director), accruing additional points whenever a committee member and the CEO both served in the military, graduated from the same university (and were born within three years of each other), were born in the same U.S. region (or the same non-U.S. country), have the same academic discipline, have the same industry of primary employment, or directly share at least two of the aforementioned, possible ties with a common third party (this common third party is not limited to members of the audit committee, and can be any member of the board).

[32] The scope of this final catchall is limited to (voluntary) proxy disclosures.

B. 3. Other Regression Variables

In addition to an affiliation index, we include the following control variables to account for various economic and governance factors that enhance (or temper) earnings-management tendencies: *ln(Total Assets)*, *Long-Term Debt*, *ln(MB)*, *Neg.NI*, *Analyst Coverage*, *ln*(*Audit Committee Size*), *Old Directors on Audit Committee*, *Busy Audit Committee*, *Audit Committee Members' Equity Holdings*, *CEO from Other Company on Audit Committee*, *CEO Equity Holdings*, *CEO Award*, *CEO=Chairman*, *CEO Tenure*, *Classified Board*, *Democracy Firm*, *Dictatorship Firm*, and *Family Firm*. Our choice of control variables was guided by Klein (2002) and Hwang and Kim (2009), among others. Please refer to Appendix H for a description of each variable and its expected relation with the extent of earnings-management activity.

C. CEO, Firm, and Audit-Committee Characteristics

In Table 22, we present summary statistics on the various conventional and social ties between audit-committee members and the CEO. In terms of our social measures, 2.7% of committee members share a military tie with the CEO, 2.1% share a university tie, 15.7% share a regional tie, 18.0% share a discipline tie, 2.6% share an industry tie, and 3.4% share a third-party tie. In terms of our conventional measures, 0.1% of the committee members are current employees, 2.7% are former employees, 0.1% are employees of an organization receiving charitable contributions, 1.7% are customers of or suppliers to the firm (or employees thereof), 5.2% are providers of professional services to the firm (or employees thereof), 0.3% are relatives of an executive officer,

1.4% are involved in an interlocking directorate, and none share some other form of (voluntarily disclosed) tie with the CEO.

In Tables 23 and 24, we present summary statistics on various audit-committee, board, CEO, and firm characteristics. Social ties to the CEO are much more prevalent among audit-committee members than conventional ties, with an average *Social Index* of 0.445 as opposed to an average *Conventional Index* of 0.114 (i.e., on average, each committee member has roughly 0.4 social ties and 0.1 conventional ties to the CEO).[33] Moreover, we observe a strong presence of social ties in a considerable portion of the audit committees in our sample; 40.8% of audit committees have a *Social Index* greater than 0.5, and 15.4% have a *Social Index* greater than 1.0 (untabulated).

4. Empirical Results

A. Abnormal Accruals

To test our main hypothesis, we estimate the following pooled OLS regression:

$$\left|AAC_{i,t}\right| = \alpha + \beta\, AffiliationIndex_{i,t} + X\gamma + Year\lambda + \varepsilon_{i,t}\,. \qquad (3)$$

$|AAC_{i,t}|$, the dependent variable, is the absolute value of performance-adjusted abnormal accruals (as described in Section 3.B.1.) for firm *i* in year *t*. $AffiliationIndex_{i,t}$ is the audit committee's average number of ties (per director) to the CEO. We compare two affiliation indices within our full sample: the *Conventional Index*, and the *Conventional-and-Social Index*, and we also examine the incremental impact of the *Social Index* within the subsample of audit committees with no conventional ties to the firm or CEO (i.e., *Conventional Index* = 0). *X* is a set of the following control variables: *ln(Total Assets)*,

[33] The social index, an analogue of the conventional index, accrues points for each social tie.

Long-Term Debt, *ln(MB)*, *Neg.NI*, *Analyst Coverage*, *ln(Audit Committee Size)*, *Old Directors on Audit Committee*, *Busy Audit Committee*, *Audit Committee Members' Equity Holdings*, *CEO from Other Company on Audit Committee*, *CEO Equity Holdings*, *CEO Award*, *CEO=Chairman*, *CEO Tenure*, *Classified Board*, *Democracy Firm, Dictatorship Firm*, and *Family Firm*. As in Klein (2002), we use lagged values of the market-to-book ratio and *Neg.NI*, and we use contemporaneous values of the remaining economic determinants. Likewise, we use contemporaneous values of all governance variables and indicators of the CEO's value or power, since a CEO's margin of freedom and his incentives to manage earnings are determined by the contemporary governance structure and concurrent perceptions of the CEO's value. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

We estimate this regression equation in our sample winsorized at the 95th percentile of |*AAC*|, which contains extreme outliers. Our results are robust to estimating median regressions, which, in contrast to OLS regression, seek to minimize absolute deviations and assigns equal weight to residuals. However, OLS estimates have the advantage of being analytically solvable, and moreover, can be adjusted for serial correlation.

The results, which we present in Table 25, show a substantially stronger relation (both economically and statistically) between abnormal accruals and the *Affiliation Index* when we consider social ties in addition to the conventional ties. When we regress abnormal accruals on the *Conventional Affiliation Index* (Column 1), we obtain a coefficient estimate of 0.060 (*t*-statistic = 0.76), which translates to a 0.022 increase in

abnormal acrruals for a two standard-deviation increase in the *Conventional Index*. However, when we regress abnormal accruals on the *Conventional-and-Social Affiliation Index* (Column 2), we obtain a coefficient estimate of 0.085 (t-statistic = 2.27), which translates to a 0.076 increase in $|AAC|$ for a two standard-deviation increase in the *Conventional-and-Social Index*. Such an increase would promote the median firm (in terms of $|AAC|$) to the 69th percentile. Consistent with these differences, we observe that within the subsample of audit committees with no conventional ties to the CEO (Column 3), the *Social Index* remains a significant determinant of earnings management, with a coefficient estimate of 0.085 (*t*-statistic = 1.80). Moreover, the sizable increase in statistical significance suggests that the consideration of social ties (in addition to the conventional ties) substantially reduces noise in gauging the extent to which an audit committee is captured by the CEO. The legal restrictions in place throughout our sample period greatly reduce the level and variation in an audit committee's conventional index. However, social ties were never included in these independence rules, thereby allowing greater and more meaningful cross-sectional variation in an audit committee's independence, and increasing the power of our tests when we use the *conventional-and-social index*, as opposed to the *conventional index*.

Although our main focus is on the extent of earnings-management activity, we also conduct directional tests around specific corporate events, which, while more narrow in scope, provide an interesting additional test of the effect of social ties on earnings management activity. We condition our analysis on two events: (1) the arrival of a new CEO, and (2) large sale of shares. Newly appointed CEOs have big-bath incentives, since current earnings disappointments can be attributed to the departing CEO. On the other

hand, CEOs selling large quantities of shares have strong upward-managing incentives. If social ties do not facilitate earnings management, then we should not observe greater upward or downward management of earnings in these scenarios.

To test this hypothesis, we plot the average and median (signed) discretionary accruals of sample firms who are above versus below the median in terms of their audit committees' *Social Index*, and we continue to focus on firms whose audit committees have no conventional ties to the CEO. With regard to CEO trades, we examine firm-years in which the CEO sells more than $1 million in shares through open-market trades. With regard to incoming CEOs, we examine new appointments occurring three to nine months prior to the fiscal-year end in which the outgoing CEO is no longer involved in the management of the firm (i.e., as an employee or board member).[34] The first filter serves to distinguish the new appointments who not only have the incentive but also the opportunity to declare large losses (CEOs who arrive early in the fiscal year can still be blamed for poor performance, and those who arrive too late may no longer have ample opportunity); the second filter further weeds out CEOs who lack incentives or opportunity, since it may be difficult to blame poor performance on a predecessor who remains active in the firm's management.

The results, plotted in Figure 2, generally support the notion that social ties facilitate earnings management. New CEOs have negative abnormal accruals in both the low and high *Social Index* firms (Panel A). However, we observe that average and median abnormal accruals are even more negative in the high *Social Index* firms. Similarly, we observe that in firm-years with large CEO trades, average abnormal

[34] We observe very similar results whether we alter the appointment window for incoming CEOs, as well as whether we alter the minimum sales requirement for CEO trades.

accruals are positive, and even more so in the high *Social Index* firms (Panel B), though we observe no such effect with respect to median abnormal accruals.

B. Propensity to Meet or Beat Earnings Targets

As an alternative approach to testing for earnings management, we examine the distribution of reported earnings around earnings targets (Burgstahler and Dichev, 1997; Healy and Wahlen, 1998; DeGeorge et al., 1999; Yu, 2008). A disproportionately large fraction of reported earnings either exactly meet or narrowly beat thresholds (Burgstahler and Dichev, 1997; DeGeorge et al., 1999), suggesting a propensity to manage earnings to avoid missing targets. Here, we examine whether a firm's propensity to exactly meet or narrowly beat earnings targets increases in the number of social ties. If social ties do not facilitate earnings management, then we should not observe an increased structural break in the distribution of reported earnings around earnings targets (which we measure using quarterly earnings consensus forecasts) when we consider an audit committee's social affiliation in addition to its conventional affiliation to the CEO. To control for other determinants of barely meeting (or barely missing) earnings targets, we estimate the following binary response model using the logistic function:

$$D_{i,t} = \alpha + \beta DependenceIndex_{i,t} + X\gamma + YearQtr\lambda + Ind\omega + \varepsilon_{i,t}. \quad (4)$$

$D_{i,t}$, the dependent variable, equals one if the quarterly earnings-per-share for firm i in year/quarter t either exactly meets or narrowly beats the consensus forecast by one cent, and zero otherwise. For a consistent comparison, we focus on the sample of firm-year/quarters for which earnings-per-share falls within four cents below or one cent above the consensus forecast. Our lower-bound cutoff was guided by the relative scarcity

of firms missing targets by one cent, and we obtain very similar results whether we redefine our narrowly-miss outcome by a three-, four-, or five-cent cutoff. We also observe very similar results whether we redefine our narrowly-beat outcome by a two-, three-, or four-cent cutoff.[35] As before, we compare the *Conventional Index* and the *Conventional-and-Social Index* (in the full sample), and we examine the *Social Index* within the subsample of audit committees with no conventional ties. *X* is the same set of control variables as in regression equation (3). *YearQtr* denotes the year-quarter dummies, $Year_{1996}Qtr_2$ through $Year_{2005}\ Qtr_4$, and *Ind* denotes the industry dummies, Ind_2 through Ind_5, using the Fama-French (1997) five-industry classification.[36] All *p*-values are adjusted for clustering (by firm).

The results, which we present in Table 26, show positive relations between the *Affiliation Index* and the propensity to meet or narrowly beat forecasts. All else equal, a two-standard deviation increase in the *Conventional Index* is associated with an 8% increase (*p*-value = 0.00) in the likelihood of narrowly beating forecasts, and a two-standard deviation increase in the *Conventional-and-Social Index* is associated with a 13% increase (*p*-value = 0.00) (within our beat-versus-miss sample, 65% barely meet targets and 35% barely miss). The probability increase associated with the *Conventional-and-Social Index* is not entirely due to the conventional ties between audit committee members and the CEO. Within the subsample of audit committees with a *Conventional*

[35] In addition to official benchmarks, managers may also strive to meet (unofficial) whisper numbers, which tend to be more optimistic than analyst consensus forecasts (Bagnoli, Beneish, and Watts, 1999).

[36] We use the five-industry classification because the use of finer industry classifications results in a much sparser partition, with many industry categories having only one or two firms. We obtain these industry partitions from Ken French's website: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

Index of zero, the *Social Index* substantially increases the propensity to narrowly beat as opposed to narrowly miss earnings forecasts (coefficient estimate = 0.759, *p*-value = 0.00).

Overall, the results indicate a substantially larger gap between the likelihood of narrowly beating targets and the likelihood of narrowly missing targets when we consider social ties in addition to the conventional ties. Moreover, our results are robust to including the average change in analysts' forecasts (untabulated), suggesting that our results are not being driven by increased expectations management.[37] Consistent with Table 25, this increased discontinuity further suggests that social ties (between audit-committee members and the CEO) facilitate earnings management.

C. Missing Data

One possible concern now arises from the committee members missing data along our social criteria, who (by default) are not socially linked to the CEO. If the missing data are missing in a systematic fashion that is associated with abnormal accruals, then our results may be the outcome of some underlying factor unrelated to the informal connections between CEOs and their audit committees. In terms of data coverage, we have 79.3% coverage with respect to alma mater, 66.1% with respect to regional origin, 56.3% with respect to academic discipline, and 84.5% with respect to industry of primary employment. Because military service is an important career point, we assume that a

[37] There is evidence that managers engage in expectations management, influencing analysts to "walk down their estimates to a level that firms can beat at the official earnings announcement" (Richardson, Teoh, and Wysocki, 2004). Our results are very similar whether we calculate analyst forecast revisions as the average difference between the most recent forecasts and the forecasts from 6- or 12-months prior or the first available forecast.

blank military-service field implies that the member in question simply did not serve in the military. Overall, 94.9% of all committee members have some data on alma mater, regional origin, background or industry, 80.0% have at least two data points, and 70.9% have at least three.

We find that these coverage rates are not significantly related to firm size, market-to-book ratio, or the various governance variables, nor do they vary significantly across industries. To further explore this point, we re-create our index using only the committee members who have at least two non-missing data points in terms of social-ties data (i.e., directors for whom we have data on at least two of the following characteristics: alma mater, regional origin, discipline, and industry). This minimum data-coverage criterion reduces the likelihood that a low index value is simply the result of low data coverage. Using this new index, we obtain results very similar to those reported in Tables 25 and 26; likewise, we obtain very similar results when we impose a three-coverage minimum.

D. CEO Benefits

Given that socially dependent audit committees are associated with increased earnings management, the CEO's annual bonus, which is a direct function of the firm's financial statements (Murphy, 1999),[38] is one potential channel through which CEOs (tangibly) benefit from social ties with committee members. Under a typical compensation plan, the CEO's bonus is a function of earnings once a minimum threshold has been met and is constrained by an annual cap (Murphy, 1999). Thus, despite the eventual reversal of accruals, the CEO has an incentive to manage earnings in order to maximize his bonus

[38] Murphy (1999) finds that 91% of firms in his sample explicitly use accounting earnings in their annual bonus plans.

across periods (Healy, 1985; Holmstrom and Milgrom, 1987; Murphy, 1999). If social ties facilitate earnings management, we expect that CEOs with socially affiliated audit committees will accrue higher bonuses.

To test this conjecture, we regress the CEO's annual bonus (in millions) on the affiliation index and a set of controls, *X*, consisting of *ln(Total Assets)*, *ln(MB)*, *ROA* , *ln(Audit Committee Size)*, *Old Directors on Audit Committee*, *Busy Audit Committee*, *Audit Committee Members' Equity Holdings*, *CEO from Other Company on Audit Committee*, *CEO Equity Holdings*, *CEO Award*, *CEO=Chairman*, *CEO Tenure*, *Classified Board*, *Democracy Firm, Dictatorship Firm*, and *Family Firm*. We include past *ROA*, the firm's past return on assets, to capture the CEO's quality through his past performance. As such, we exclude those firm-years in which there are new arrivals since past firm performance cannot be attributed to an incoming CEO (regardless, our results are very similar under the larger sample obtained if we do not control for past performance). The remaining control variables, with the exceptions of *Long-Term Debt* and *Neg.NI*,[39] are the same as in regression equation (3) and are as defined in Appendix H. We include year and industry dummies using the Fama-French (1997) five-industry classification, and all *t*-statistics are calculated using White standard errors adjusted for clustering (by firm), which accounts for heterskedasticity and serial correlation (Petersen, 2007).

The results, which we present in Table 27, show a significant bonus differential when we consider both the conventional and social ties (Column 2) as opposed to the

[39] The motivation behind including *Long-Term Debt* and *Neg.NI* as control variables in regression equations (3) and (4) does not apply to the *CEO Bonus* regression. However, our *CEO Bonus* results are robust to their inclusion.

conventional ties alone (Column 1), pointing to the tangible benefits that CEOs enjoy when they are socially connected to their audit committees. On average, a two standard-deviation increase in the *Conventional-and-Social Index* is associated with a $0.339 million increase in the CEO's annual bonus (*t*-statistic = 2.16). In contrast, a two standard-deviation increase in the *Conventional Index* is associated with a $0.041 million increase that is not reliably different from zero (*t*-statistic = 0.26). Moreover, our results are robust to controlling for the CEO's total, non-bonus related compensation, suggesting that this higher bonus attributed to social ties is not simply the result of socially affiliated directors' desire to award the CEO a higher level of compensation (irrespective of any earnings management activity).

E. Sarbanes Oxley

The Sarbanes-Oxley Act of 2002 (SOX) marks a period of increased regulatory scrutiny, charging audit committees with greater responsibility in their financial oversight duties and requiring chief executives to certify the integrity of their financial statements. Furthermore, SOX solidified the audit-committee independence requirements imposed by the 1999 amendments to NYSE and NASDAQ listing standards, which had allowed the board to ultimately decide the independence of some potentially affiliated directors. However, amidst the heightened scrutiny, social ties were not included in the independence criteria, raising the question of whether social ties have become more important as an alternate opportunity for CEOs to capture the audit committee.

Consistent with this idea, we find a high incidence of firms replacing their financially and familial-ly affiliated audit-committee members with socially affiliated

members during the post-SOX period. Although the enactment of SOX effected an overall decrease in audit committees' conventional affiliation to the CEO, 11% of the firms whose audit committees lost conventionally affiliated members appointed socially affiliated replacements.[40] A natural question that arises is whether these socially affiliated replacements simply coincide with the passage of SOX or whether these firms are opportunistically forming superficially compliant audit committees. To explore this idea, we use a difference-in-difference approach to examine the pre- versus post-SOX differences in earnings-management activity for the audit committees that replace their conventionally affiliated members with socially affiliated ones versus those that do not. Specifically, we estimate a pooled OLS regression of abnormal accruals on a *PostSOX* indicator, an *Affiliation Shift* indicator, an *Affiliation Shift* * *PostSOX* interaction term, and the same set of controls, *X*, as in regression equation (3). *PostSOX* is an indicator variable that equals one in years greater than or equal to 2002, and zero otherwise.[41] *Affiliation Shift* is an indicator variable that equals one if a post-SOX decrease in the number of conventionally affiliated members is accompanied by an increase in the number of socially affiliated members, and zero otherwise. If the socially affiliated replacements are not an opportunistic response to tighter regulatory constraints on audit-committee composition, then we should not observe a significant coefficient estimate on the *Affiliation Shift* * *PostSOX* interaction term.

[40] We follow Hwang and Kim (2009) in classifying a director as socially affiliated if he shares at least two social ties with the CEO.

[41] We obtain similar results (in our regression as well as in our graph) when we redefine our post-SOX cutoff using the year 2003.

To the contrary, we observe a coefficient estimate of 0.103 (*t*-statistic = 1.98) on the *Affiliation Shift* * *PostSOX* interaction term (Table 27), suggesting that these socially-affiliated replacements are not a coincidental selection.

5. Conclusion

We provide evidence that social ties (in addition to financial and familial ties) are an important channel through which CEOs capture the financial reporting process. Moreover, we provide suggestive evidence on one side effect of the recent regulations requiring that all audit-committee members have neither financial nor familial ties to the CEO: the heightened regulation is accompanied by a replacement of conventionally affiliated directors with socially affiliated ones, suggesting the increasing importance of social ties amidst the increased scrutiny of the audit committee's financial and familial affiliations with the CEO. Thus, the evidence we present pertains to the discussion surrounding the economic consequences of regulation as well as to the vast academic literature studying the link between corporate governance and accounting.

Conclusion

In summary, the evidence suggests that affiliated directors are, on average, contracted for their compliance rather than for their expert advice, and that it is not only financial or familial ties to the CEO, but also social ties that affect a director's objectivity. Moreover, the evidence points to the opportunistic use of these social ties, which allow firms to circumvent explicit independence requirements.

In future work, I hope to further explore board and committee structure as an outcome of the internal (e.g., the firm's voting system) as well as external (e.g., NYSE listing standards) mechanisms in place.

Appendix A. Summary of regulatory constraints on committee composition

This table summarizes membership restrictions regarding committees of the board. A director is designated *inside* if he is an employee of the firm, *gray* if he is an outsider with financial or familial ties to the CEO or to the firm, or *independent* if he is neither inside nor gray. "Yes" indicates that director X is restricted from committee Y, and "No" indicates that he is not.

	Audit	Compensation	Governance/ Nominating	All other committees
Panel A: Inside director				
2001 and earlier	Yes	Yes	No	No
2002	Yes	Yes	No	No
2003 and beyond	Yes	Yes	Yes	No
Panel B: Gray outside director				
2001 and earlier	No[42]	No	No	No
2002	Yes	No	No	No
2003 and beyond	Yes	Yes	Yes	No
Panel C: Independent director				
2001 and earlier	No	No	No	No
2002	No	No	No	No
2003 and beyond	No	No	No	No

[42] Earlier amendments in 1999 required audit committees to be composed entirely of independent directors, but the relatively lax independence criteria allowed some gray outsiders to remain on the audit committee.

Appendix B. Description of committees

The table below provides a summary account of each committee as described by the committee charters and corresponding abstracts provided in annual proxy statements. Because the same committee has many different titles, some of which differ vastly across firm-years, the committees below have been aggregated and categorized based on their descriptions.

Committee type	Description of committee
Audit	This committee is responsible for appointing independent auditors (as well as monitoring and safeguarding their independence), reviewing audit reports and the scope and timing thereof, and recommending improvements to existing practices. This committee is also responsible for reviewing the annual report as well as ensuring proper internal controls and compliance with ethical and standards.
Compensation	This committee is responsible for reviewing and approving the firm's compensation strategy, compensation arrangements, and performance criteria for officers of the firm. This committee also reviews and retains external compensation consultants, and occasionally, oversees management succession and employee benefits plans.
Governance/Nominating	This committee is responsible for determining the responsibilities, structure, composition, and memberships of the board's committees, recommending practices to evaluate the performance and contributions of individual board members, and considering nominees to fill board vacancies. This committee also reviews the overall effectiveness of the board and the firm's governance. The Governance/Nominating Committee generally operates as a single committee and is very rarely split into a separate

	Governance Committee and Nominating Committee. Alternative handles for this committee include "Board Organization", "Organization Review", "Policy and Organization", and "Director Affairs".
Finance	This committee oversees the firm's capital needs, dividend policy, equity and debt issuances, large capital expenditures, and investment of cash reserves. This committee also reviews the financial condition of the firm and the financial consequences of proposed changes to the firm's capital structure.
Social Responsibility	This committee oversees corporate policies on political and public-policy related matters affecting the firm's operations, performance, and/or reputation. Such matters include charitable contributions, environmental policy, community relations, international affairs, matters regarding gender ethnic, or racial diversity, and other such issues pertaining to public policy or social responsibility. Alternative handles for this committee include "Public Interest", "Policy and Organization", and "Ethics and Corporate Responsibility".
Executive	This committee has the authority to exercise the powers of the full board to manage the company's business and affairs, as permitted by state law, during the intervals between board meetings.
Pension Management	This committee establishes and reviews funding strategies, performance, and investment policy of funds invested for retirement plans. To this end, this committee also oversees the appointment of insurance carriers and investment managers for funds allocated to employee retirement plans and oversees compliance with laws pertaining to employee

	benefit plans.
Science and Technology	This committee is responsible for reviewing and advising the board on the firm's strategic direction and investment in research and development and technology, both internally and externally. This committee is also responsible for identifying emerging technological trends and assessing their potential impact on the firm.
Remaining Comittees	There are many other types of standing committees that firms choose to maintain, some of which entail very firm-specific functions. Examples include: the Acquisitions Committee, which examines proposed acquisitions and oversees the direction, quality, planning, and execution of such investments; the Legal Compliance Committee, whose duties typically fall under the responsibilities of the Audit Committee but is occasionally commissioned as a separate committee; the Classified Business Reviews Committee, or Special Programs Committee, which oversees the firm's business activities requiring special levels of security clearance for access to information; the Labor Committee, which oversees negotiations and ensures compliance with labor agreements; and (prior to requirements on maintaining regular, executive sessions), an Outside/Independent Directors Committee, which provided a formal outlet for these executive sessions (i.e., meetings in which independent directors convene in absence of management).

Appendix C. Definition of variables

The following table presents an alphabetized list of regression variables with corresponding definitions.

Variable	Definition
Board Meetings	The number of annual board meetings.
Board Size	The number of board members.
CAPEX/Assets	Capital expenditures scaled by total assets.
CEO Tenure	The CEO's tenure (as CEO) in years.
CEO is Chair	Equals one if the CEO is also chairman of the board, and zero otherwise.
CEO Pay Slice	The fraction of the firm's top five compensation packages captured by the CEO. Total compensation packages are calculated as the sum of base salary, bonus, long-term incentive payouts, the value of restricted stock grants, and the Black-Scholes value of option grants converted into their stock equivalents using the options' median delta.[43]
DE Incorporated	Equals one if the firm is incorporated in Delaware, and zero otherwise.
Entrenchment Index	An index ranging from 0 to 6 that accrues one point for each of six provisions (classified board, poison pill, golden parachute, limits to bylaw amendments, super- majority requirements for charter amendments, and super- majority requirements for mergers) that increase managerial power or depress shareholder activism.
Family Firm	Equals one if a single family controls the firm's ownership and is currently active in top management, and zero otherwise. The CEO of a family firm is a *Family CEO* if he is a member of the controlling family, and a *Non-Founder*

[43] Following Baker and Hall (2004), I use a delta of 0.7, which approximates the median delta in the Hall and Liebman (1998) data.

	Family Firm refers to a family firm in which the founder is neither the CEO nor chairman of the board.
Firm Age	Calculated as the number of years from when the firm first appears in CRSP.
Herfindahl Index	Calculated as the sum of squared industry market shares (defined by the Fama-French 49-industry classification).
Industry Downturn	Equals one if the industry's median sales growth (defined by the Fama-French 49-industry classification) is negative and accompanied by a median annualized stock return that is less than or equal to -0.30, and zero otherwise.
Industry Homogeneity	Calculated as the average partial correlation between firm and equal-weighted industry returns (defined by the Fama-French 49-industry classification) accounting for equal-weighted market returns.
Leverage	Long-term debt scaled by total assets.
No. of Committees	The number of board committees.
No. of Segments	The number of business segments in which the firm operates.
R&D/Sales	Research and development expense scaled by revenue.
ROA	Net income scaled by total assets.
σ^2	The firm's past five-year stock-return volatility.
Tobin's Q	A market-to-book variant where the market value of assets is calculated as the book value of assets plus the market value of equity minus the sum of the book value of equity and balance sheet deferred taxes.
Total Assets	The book value of total assets in millions.

Appendix D: Expectations under economic-needs versus rubber-stamp hypotheses

This table summarizes the expected relations between the extent of affiliated directors' committee involvement and past realizations of firm and industry characteristics. The same expected relations apply with regard to the fraction of a committee's members who are affiliated directors. On one end of the spectrum is the 'Economic-needs hypothesis', which presents expected relations under the presumption that directors are assigned duties based on specialized advisory needs. On the other end, is the 'Rubber-stamp hypothesis', which presents expected relations under the presumption that directors are assigned duties based on other, opportunistic objectives.

Variable	Expected relation with affiliated directors' committee involvement under…	
	Economic-needs hypothesis	Rubber-stamp hypothesis
Firm characteristics		
log(Assets)	–	No effect
log(Age)	–	No effect
log(Leverage)	+	No effect
ROA	–	+
σ^2	+	No effect
No. of Segments	–	No effect
CAPEX / Assets	+	No effect
R&D / Sales	+	No effect
Post-regulation dummy		
PostReg	No effect	–
Industry characteristics		
Herfindahl Index	+	No effect
Industry Homogeneity	–	No effect

Appendix E: Academic disciplines

This is a list of the academic discipline categories. We begin with the basic partition from the *US News and World Report*, which we augment with several disciplines that are not available in this guide (denoted by *). Our final list ensures that every reported major is assigned to one of these categories.

	Areas of concentration
1	Business
2	Law
3	Medicine
4	Engineering
5	Education
6	Biological sciences
7	Chemistry
8	Computer science
9	Earth sciences
10	Mathematics
11	Physics
12	Library and information studies
13	Criminology
14	Economics
15	English
16	History
17	Political science
18	Psychology
19	Sociology
20	Health
21	Public affairs
22	Fine arts
23	Theology*
24	Agriculture*
25	Foreign languages*
26	Journalism*

Appendix F: Description of variables

This is a discussion of our control variables and their expected relations with the level of CEO compensation.

Firm Size (Total Assets): To measure firm size, we use the book value of total assets in millions (in our regressions, we use the log of this variable). Previous studies find a positive relation between size and the level of compensation (Murphy, 1999; Baker, Jensen, and Murphy, 1988), and there are various alternative explanations regarding the reasons. Some argue that larger firms employ superior managers (Rosen, 1982). Others argue that managers exploit size to justify higher compensation (Bebchuk and Fried, 2003).

Growth Opportunities (MB): To measure growth opportunities, we take the ratio of the market value of equity to the book value of equity plus deferred taxes (in our regressions, we use the log of this variable). Growth firms likely need better managers, implying that the level of compensation increases with the market-to-book ratio (Smith and Watts, 1992; and Gaver and Gaver, 1993).

Prior Firm Performance (ROA)/Past Returns (RET): To measure prior firm performance, we calculate the cumulative stock return and the return on assets (i.e., the ratio of net income to total assets) from the previous fiscal year. From an agency standpoint, compensation should be an increasing function of performance. Moreover, firms with poor prior performance might be forced to decrease the level of compensation to reduce expenses or public outrage, and excellent prior performance can justify higher compensation. To ensure that firm performance is matched to the appropriate CEO, we exclude new arrivals from our regressions because past firm performance cannot be

attributed to the incoming CEO. We use one-year measures of performance to minimize the number of observations we lose.

Variance of Residuals (σ^2): To proxy for firm-specific risk, we calculate the variance of the residuals from the market-model regression over the past five-year period. Theoretically, firm risk could be positively or negatively associated with the level of compensation (Banker and Datar, 1989).

CEO Equity Holdings: We also control for the percentage of the company's shares that are owned by the CEO. Some hypothesize that (from a managerial-power point of view) executive compensation increases with CEO ownership, but they allow for a possible inverted U-shaped association (Finkelstein and Hambrick, 1989). Others argue that the association between the level of compensation and the CEO's equity holdings is "theoretically ambiguous" (Cyert, Kang, and Kumar, 2002, p. 454).

Quality (CEO Award): This is a dummy that equals one if the CEO has ever won the "Business Week Best Manager Award", and zero otherwise. We hand-collect this information from the *Business Week* archives. The idea is that recipients of this award might be of higher quality and that higher quality deserves higher total compensation. Alternatively, this award might signify greater power over the board.

CEO=Chairman of the Board (CEO=Chairman): This is a dummy that equals one if the CEO also serves as the chairman of the board, and zero otherwise. If the CEO is also the chairman of the board, the board could be easier for the CEO to control, a hypothesis that is empirically supported by Yermack (1996) and Core, Holthausen, and Larcker (1999), among others. Thus, we expect chairman CEOs to receive a higher level of compensation than their non chairman counterparts.

CEO Tenure: This is the number of years the CEO has been in office. Higher tenure alludes to the CEO's quality (because he is worth keeping) and his worth as a "rare commodity" (Hermalin and Weisbach, 1998, p. 97). Thus, we expect compensation to increase with tenure.

Board Size: Board size is the number of directors on the board (in our regressions, we use the log of this variable). Lipton and Lorsch (1992) argue that larger boards are more susceptible to managerial control and have increased coordination and free-rider problems, and Yermack (1996) finds that firm value is decreasing in board size. To the contrary, Coles, Daniel, and Naveen (2008) find that firms with greater advisory needs exhibit a positive association between board size and firm value. However, because executive compensation is a monitory, not an advisory, issue, we expect a positive relation between board size and compensation.

Old Directors: Following the mandatory age requirements of many firms, we define a director as old if he or she is 70 years or older, and we calculate the *Old Directors* variable as the fraction of directors over the age of 69. Older directors are possibly less effective monitors (NACD, 1996; and Core, Holthausen, and Larcker 1999). Thus, we expect this fraction to have a positive impact on the level of compensation.

Busy Board: This is a dummy that equals one if the board is busy, and zero otherwise. Following Fich and Shivdasani (2006), we designate a board as busy if a majority of the independent directors concurrently serve on three or more boards. Some argue that directors who serve on too many boards do not have sufficient time to provide adequate monitoring (NACD, 1996). Core, Holthausen, and Larcker (1999) and Fich and Shivdasani (2006) present evidence that busy boards indicate weak corporate governance.

If busy directors are less effective monitors, then busy boards should be positively associated with the level of compensation.

Directors' Equity Holdings: We also control for the average percentage of the company's shares that are owned by the directors. Greater equity ownership suggests that the directors' interests are more aligned with those of the shareholders. As such, the directors are incensed to be better monitors and, accordingly, we expect the level of CEO compensation to be lower.

CEO from Other Company: This is a dummy that equals one if at least one of the directors is the CEO of another firm, and zero otherwise. We expect that CEOs award their fellow CEOs a higher level of compensation, regardless of whether or not they are interlocked**.**

Classified Board: This is a dummy that equals one if the firm has a classified-board provision (i.e., the directors have a staggered election-term structure), and zero otherwise. Bebchuk and Cohen (2005) argue that classified boards entrench management and find that they are negatively associated with firm value. Faleye (2007) further argues that classified boards reduce director effectiveness and finds that CEO turnover and compensation are less sensitive to performance at firms with classified boards. If board-staggering empowers managers, then we expect these managers to receive a higher level of compensation.

Democracy/Dictatorship Firm: Following Gompers, Ishii, and Metrick (2003), *Democracy Firm* is a dummy that equals one if the firm's GIM index is less than or equal to five, and zero otherwise. *Dictatorship Firm* is a dummy that equals one if the firm's GIM index is greater than or equal to 14, and zero otherwise. A firm's GIM index takes

on a value between 0 and 24, accruing one point for each provision that increases managerial power or depresses shareholder activism. We expect that firms with higher indices award higher levels of compensation.

Family Firm: This is a dummy that equals one if at least one relative of the founder is an officer, a director, or a 5% minimum blockholder (either individually or as a group) of the firm, and zero otherwise (we do not consider family firms in which the founder is still a chairman or CEO of the firm). Descendent-run firms have significantly lower firm value, and minority shareholders in these firms are "worse off than they would be in nonfamily firms" (Villalonga and Amit, 2006, p. 388). Thus, we expect a positive association between *Family Firm* and the level of compensation.

Appendix G: Correlation matrix

This table presents a correlation matrix of the independent variables used in our main analysis.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	*Board Ind. Dummy$_{new}$*	**1.00**										
(2)	*Board Ind. Dummy$_{conv}$*	0.49	**1.00**									
(3)	*Board Ind. Fraction$_{new}$*	**0.81**	0.48	**1.00**								
(4)	*Board Ind. Fraction$_{conv}$*	**0.51**	**0.75**	**0.67**	**1.00**							
(5)	*ln(Total Assets)*	-0.05	0.05	-0.03	0.08	**1.00**						
(6)	*ln(MB)*	-0.05	-0.02	-0.10	-0.08	-0.24	**1.00**					
(7)	*ROA*	0.09	0.02	0.05	0.00	-0.33	**0.64**	**1.00**				
(8)	*RET*	-0.08	-0.07	-0.11	-0.12	-0.08	0.23	0.11	**1.00**			
(9)	*Variance*	0.05	-0.01	0.09	0.06	-0.14	-0.06	-0.02	0.08	**1.00**		
(10)	*CEO Equity Hldgs*	-0.11	-0.22	-0.18	-0.24	-0.06	0.01	0.09	0.11	0.10	**1.00**	
(11)	*CEO Award*	0.01	0.08	-0.01	0.08	0.15	0.18	0.19	-0.01	-0.06	-0.09	**1.00**
(12)	*CEO=Chairman*	0.07	0.17	0.09	0.19	0.08	-0.09	-0.08	-0.06	-0.15	0.02	-0.13
(13)	*CEO Tenure*	-0.23	-0.25	-0.30	-0.29	0.00	0.04	-0.02	0.07	-0.05	0.43	-0.20
(14)	*ln(Board Size)*	0.00	0.05	0.02	-0.06	0.21	0.13	-0.03	-0.01	-0.31	-0.32	0.07
(15)	*Old Directors*	-0.15	-0.09	-0.12	-0.02	0.19	-0.23	-0.17	-0.06	-0.02	0.03	-0.07
(16)	*Busy Board*	0.00	0.15	0.00	0.13	0.10	-0.02	-0.03	0.00	-0.13	-0.10	0.06
(17)	*Directors Equity Hldgs*	-0.20	-0.35	-0.20	-0.36	-0.05	-0.03	0.06	0.06	0.04	0.43	-0.01
(18)	*CEO Other Company*	0.10	0.14	0.14	0.19	0.16	0.06	0.01	-0.12	0.06	-0.15	0.11
(19)	*Classified Board*	0.02	0.04	0.05	0.10	-0.33	0.03	-0.03	0.04	0.18	-0.06	-0.16
(20)	*Democracy Firm*	-0.08	-0.12	-0.13	-0.16	0.08	0.09	0.05	-0.03	-0.06	-0.04	0.09
(21)	*Dictatorship Firm*	0.01	0.02	0.00	-0.02	-0.08	-0.07	-0.04	0.05	-0.01	-0.03	-0.07
(22)	*Family Firm*	-0.09	-0.17	-0.12	-0.18	-0.01	-0.19	-0.15	-0.03	0.02	0.01	-0.06

		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1)	*Board Ind. Dummy$_{new}$*											
(2)	*Board Ind. Dummy$_{conv}$*											
(3)	*Board Ind. Fraction$_{new}$*											
(4)	*Board Ind. Fraction$_{conv}$*											
(5)	*ln(Total Assets)*											
(6)	*ln(MB)*											
(7)	*ROA*											
(8)	*RET*											
(9)	*Variance*											
(10)	*CEO Equity Hldgs*											
(11)	*CEO Award*											
(12)	*CEO=Chairman*	**1.00**										
(13)	*CEO Tenure*	0.16	**1.00**									
(14)	*ln(Board Size)*	0.16	0.07	**1.00**								
(15)	*Old Directors*	0.05	0.12	0.00	**1.00**							
(16)	*Busy Board*	0.08	-0.18	-0.03	-0.15	**1.00**						
(17)	*Directors Equity Hldgs*	-0.08	0.13	-0.09	-0.01	-0.10	**1.00**					
(18)	*CEO Other Company*	0.10	-0.05	0.15	-0.03	-0.01	-0.04	**1.00**				
(19)	*Classified Board*	0.10	0.05	-0.03	0.02	-0.06	-0.16	-0.09	**1.00**			
(20)	*Democracy Firm*	-0.22	0.06	0.09	0.03	-0.06	0.13	0.01	-0.32	**1.00**		
(21)	*Dictatorship Firm*	0.06	0.03	0.02	0.09	-0.08	-0.03	0.02	0.13	-0.04	**1.00**	
(22)	*Family Firm*	-0.17	-0.10	-0.14	0.00	-0.08	0.40	-0.10	-0.18	0.15	-0.04	**1.00**

Appendix H: Description of variables

H Here, we discuss our control variables and their expected relations with earnings management / abnormal accruals.

Firm Size (total assets): To measure firm size, we use the book value of total assets in millions (in our regressions, we use the log of this variable). Managers of large, visible firms incur higher political costs and thus have incentives to reduce reported income. There is evidence that managers of large firms not only lobby for income-reducing accounting standards (Watts and Zimmerman, 1978) but also exploit discretionary accounting choices to reduce reported income (e.g., Zmijewski and Hagerman, 1981; Lilien and Pastena, 1982). With respect to discretionary-accruals models, however, studies have found a negative relation between firm size and earnings management (e.g., Warfield, Wild, and Wild, 1995; Klein, 2002).

Leverage (long-term debt): To measure leverage, we divide long-term debt (which includes both public and private debt) by total assets. High leverage is associated with greater bankruptcy risk (Ohlson, 1980), and "managers of firms approaching violations of accounting-based restrictions [in debt agreements] are more likely to make income-increasing discretionary accounting changes" (Sweeney, 1994). Thus, we expect a positive association between leverage and the extent of earnings management.

Market-to-Book Ratio: We calculate the market-to-book ratio as the market value of equity divided by the sum of the book value of equity and deferred taxes (in our regressions, we use the log of this variable). Growth stocks "exhibit an asymmetrically large negative price response to negative earnings surprises" (Skinner and Sloan, 2002).

Thus, we expect a positive association between market-to-book ratio and the extent of earnings management.

Negative Earnings Dummy (Neg.NI): This is a dummy that equals one if the firm has had two or more consecutive years of negative income, and zero otherwise. Management might be enticed to report positive earnings via a higher level of earnings management after a streak of negative earnings.

Analyst Coverage: This is the number of analysts providing one-year earnings forecasts for the firm in question. On one hand, analysts may act as an external governance mechanism, monitoring the firm's disclosures (Healy and Palepu, 2001; Yu, 2008). Alternatively, they may exert undue pressure on firms, which could increase earnings management tendencies (Yu, 2008).[44]

Audit Committee Size: Audit Committee size is the number of directors on the audit committee. Lipton and Lorsch (1992) argue that larger boards are more susceptible to managerial control and have increased coordination and free-rider problems. Similarly, we expect firms with larger audit committees to exhibit greater earnings management.

Old Directors on Audit Committee: Following the mandatory age requirements imposed by many firms, we define a director as old if he/she is 70 years or older. We follow prior literature in labeling these directors "old," and we calculate the Old Directors variable as the fraction of committee members over the age of 69. Older directors are possibly less effective monitors (NACD, 1996; Core et al., 1999); thus, we expect this fraction to be positively associated with the level of earnings management.

[44] Yu (2008) provides evidence in support of the former.

Busy Audit Committee: This is a dummy that equals one if the audit committee is busy, and zero otherwise. Following Fich and Shivdasani (2006), we designate an audit committee as 'busy' if a majority of the independent directors concurrently serve on three or more boards. Some argue that directors who serve on too many boards do not have sufficient time to provide adequate monitoring (NACD, 1996), and Core et al. (1999) and Fich and Shivdasani (2006) present evidence that busy boards indicate weak corporate governance. If busy directors are less effective monitors, then busy audit committees should be positively associated with the level of earnings management.

CEO from Other Company on Audit Committee : This is a dummy that equals one if at least one of the directors on the audit committee is the CEO of another firm, and zero otherwise. We expect that CEOs are inclined to allow their fellow CEOs greater leeway in managing earnings, regardless of whether or not they are interlocked**.**

CEO Equity Holdings / Audit Committee Members' Equity Holdings: We calculate CEO Equity Holdings as the percentage of the company's shares held by the CEO, and we calculate Audit Committee Members' Equity Holdings as the average percentage of the company's shares held by the committee members. Aboody and Kasznik (2000) present evidence that managers opportunistically time voluntary disclosures around options awards. Similarly, CEOs may manage earnings to increase the value of their vested equity holdings. On the other hand, greater equity ownership suggests that CEO/director and shareholder interests are better aligned, and Warfield et al. (1995) find that "managerial ownership is positively associated with earnings' explanatory power for returns and inversely related to the magnitude of accounting accrual adjustments."

CEO Award: This is a dummy that equals one if the CEO has ever won the "Business Week Best Manager Award" (we hand-collect this information from the Business Week archives), and zero otherwise. The idea is that recipients of this award are under more pressure to continue exhibiting signals of high quality, and thus may be more likely to manipulate earnings (Malmendier and Tate, 2007).

CEO is Chairman of the Board (CEO = Chairman): This is a dummy that equals one if the CEO also serves as the chairman of the board, and zero otherwise. If the CEO doubles as chairman of the board, the board may be easier for the CEO to control, a hypothesis that is empirically supported by Yermack (1996) and Core et al. (1999), among others. Thus, we expect chairman CEOs to have more freedom to manage earnings than their non-chairman counterparts.

CEO Tenure: CEO tenure is the number of years the CEO has been in office. Greater tenure contributes to greater clout with the board (Hermalin and Weisbach, 1998). Thus, we expect CEOs with greater tenure to have more freedom to manage earnings.

Classified Board: This is a dummy that equals one if the firm has a classified-board provision (i.e., the directors have a staggered election-term structure), and zero otherwise. Bebchuk and Cohen (2005) and Faleye (2007) argue that classified boards entrench management. On one hand, if board-staggering empowers managers, then we expect these managers to have greater freedom to manage earnings. On the other hand, if board-staggering sufficiently entrenches managers, then these managers may not feel the pressure to manage earnings.

Democracy / Dictatorship Firm: The democracy firm dummy equals one if the firm's GIM index is less than or equal to five, and minus zero otherwise. The dictatorship firm

dummy equals one if the firm's GIM index is greater than or equal to fourteen, and minus zero otherwise. A firm's GIM index takes on a value between 0 and 24, accruing one point for each provision that increases managerial power and/or depresses shareholder activism (Gompers, Ishii, and Metrick, 2003). On one hand, we expect that at firms with higher indices, managers have greater freedom and power to manage earnings. On the other hand, if managers are sufficiently entrenched, they may not feel the pressure to manage earnings.

Family Firm: This is a dummy that equals one if at least one relative of the founder is an officer, a director, or a 5%-minimum blockholder (either individually or as a group) of the firm, and zero otherwise (we do not consider family firms in which the founder is still a chairman or CEO of the firm). Descendent-run firms have agency issues such that minority shareholders in these firms are "worse off than they would be in nonfamily firms" (Villalonga and Amit, 2006). Thus, we expect a positive association between *Family Firm* and the level of earnings management.

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Table 1
Board composition and committee involvement

This table presents summary statistics of board composition and committee involvement. A director is designated *inside* if he is an employee of the firm, *gray* if he is an outsider with financial or familial ties to the CEO or to the firm, or *independent* if he is neither inside nor gray. Panel A presents the average fraction of board members who are insiders, gray outsiders, or independent. These average fractions are calculated as pooled means of the fractions of the various director-types on each board. Panel B presents average committee involvements, where a director's *committee involvement* refers to the proportion of the board's committees of which he is a member. These average fractions are calculated as pooled means of the average committee involvements of the various director-types on each board. Panel C presents the average fraction of directors who have no committee involvement. Standard deviations are presented below in parentheses.

Director type	N	Mean	(Stdev.)
Panel A. Proportion of directors who are inside, gray outside, or independent (firm-year level)			
All directors	812	1.00	---
Inside	812	0.17	(0.09)
Gray outside	812	0.11	(0.12)
Independent	812	0.72	(0.16)
Panel B. Average committee involvement (firm-year level)			
All directors	812	0.38	(0.09)
Inside	812	0.15	(0.13)
Gray outside	812	0.23	(0.22)
Independent	812	0.45	(0.13)
Panel C. Fraction of directors with no committee involvement (director-firm-year level)			
All directors	10,317	0.13	---
Inside	1,762	0.46	---
Gray outside	1,169	0.16	---
Independent	7,386	0.04	---

Table 2
CEO, board, and firm characteristics

This table presents summary statistics of various director, committee, board, and firm characteristics. Panel A presents CEO characteristics, where *CEO involved* is an indicator that equals one if the CEO is directly involved in apportioning committee assignments (i.e., he is a member of the Governance Committee), and zero otherwise, *CEO Tenure* is the CEO's tenure (as CEO) in years, *CEO is Chair* is an indicator that equals one if the CEO is also chairman of the board, and zero otherwise, *CEO Pay Slice* is the fraction of the top five compensation packages captured by the CEO, and *Family CEO* is an indicator variable that equals one if the CEO (of a family firm) is a member of the controlling family, and zero otherwise. Panel B presents board and governance characteristics, where *Board Size* is the number of board members, *No. of Committees* is the number of board committees, *Board Meetings* is the number of annual board meetings, *Entrenchment (BCF) Index* is an index ranging from 0 to 6 that accrues one point for each of six provisions that increase managerial power or depress shareholder activism, *Family Firm* is an indicator that equals one if a single family controls the firm's ownership and is currently active in top management, and zero otherwise, and *DE Incorporated* is an indicator that equals one if the firm is incorporated in Delaware, and zero otherwise. Panel C presents firm characteristics, where *Total Assets* is the book value of total assets in millions, *ROA* is the return on assets (i.e., net income scaled by total assets), σ^2 is the five-year stock-return volatility, *CAPEX/Assets* is capital expenditures scaled by total assets, *R&D/Sales* is research and development expense scaled by revenue, *Leverage* is long-term debt scaled by total assets, *Firm Age* is calculated as the number of years from when the firm first appears in CRSP,, *Diverse* is an indicator that equals one if the firm operates in two or more business segments, and zero otherwise, and *Tobin's Q* is a market-to-book variant where the market value of assets is calculated as the book value of assets plus the market value of equity minus the sum of the book value of equity and balance sheet deferred taxes. Panel D presents industry characteristics, where *Herfindahl Index* is calculated as the sum of squared industry market shares, *Industry Homogeneity* is calculated as the average partial correlation between firm and equal-weighted industry returns accounting for equal-weighted market returns, and *Industry Downturn* is an indicator that equals one if the industry's median sales growth is negative and accompanied by a median annualized stock return that is less than or equal to -0.30, and zero otherwise, and zero otherwise.

Variable	Mean	(Stdev.)
Panel A. CEO characteristics		
CEO involved	0.13	(0.34)
CEO Tenure	5.79	(5.91)
CEO is Chair	0.81	(0.39)
CEO Pay Slice	0.11	(0.18)
Family CEO	0.04	(0.20)
Panel B. Board and governance characteristics		
Board Size	12.59	(2.69)
No. of Committees	5.17	(1.31)
Board Meetings	8.67	(2.71)
Entrenchment Index	1.62	(1.24)
Family Firm	0.09	(0.28)
DE Incorporated	0.66	(0.48)

Table 2 continued.

Variable	Mean	(Stdev.)
Panel C. Firm characteristics		
Total Assets (in millions)	107,560	(214,306)
ROA	0.057	(0.06)
σ^2	0.086	(0.03)
CAPEX / Assets	0.056	(0.04)
R&D / Sales	0.038	(0.04)
Leverage	0.191	(0.12)
Firm Age	47.70	(25.66)
Diverse	0.80	(0.40)
Tobin's Q	1.94	(1.22)
Panel D. Industry characteristics		
Herfindahl Index	908.23	(112.35)
Industry Homogeneity	0.211	(0.10)
Industry Downturn	0.08	(0.27)
No. of observations	812	---

Table 3
Determinants of CEO involvement in committee assignments

This table presents estimates from the following pooled logistic regression:

$$CEOinvolved_{i,t} = \alpha + X_{i,t}\lambda + Industry_{i,t}\gamma + \varepsilon_{i,t}$$

CEO Involved$_{i,t}$, the dependent variable, is an indicator variable that equals one if the CEO is directly involved in apportioning committee assignments (i.e., he is a member of the Governance Committee), and zero otherwise. *P*-values account for clustering (by firm).

Variable	Coefficient estimate [*p*-value]	
	With industry dummies	With industry characteristics
CEO characteristics		
Family CEO$_{i,t}$	0.657 [0.40]	1.206 [0.12]
CEO Tenure$_{i,t}$	0.114 [0.00]	0.097 [0.00]
CEO is Chair$_{i,t}$	-1.184 [0.02]	-1.088 [0.03]
CEO Pay Slice$_{i,t}$	-0.105 [0.92]	-0.421 [0.66]
Board and governance characteristics		
Entrenchment Index$_{i,t}$	-0.018 [0.94]	0.038 [0.87]
DE Incorporated$_{i,t}$	0.554 [0.29]	0.478 [0.39]
Firm characteristics		
log(Assets$_{i,t-1}$*)*	-0.028 [0.91]	0.035 [0.92]
log(Firm Age$_{i,t}$*)*	-0.376 [0.11]	-0.280 [0.24]
Leverage$_{i,t-1}$	-1.220 [0.57]	-0.103 [0.97]
ROA$_{i,t-1}$	-3.429 [0.30]	0.109 [0.98]
$\sigma^2_{i,t-1}$	-13.185 [0.16]	-12.369 [0.23]
Diverse$_{i,t-1}$	-0.366 [0.47]	-0.228 [0.66]
CAPEX / Assets$_{i,t-1}$	-7.402 [0.26]	-5.027 [0.40]
R&D / Sales$_{i,t-1}$	-1.225 [0.47]	-0.602 [0.64]
Post-regulation dummy		
PostReg$_{i,t}$	-14.479 [0.00]	-14.281 [0.00]

Table 3 continued.

Variable	Coefficient estimate [*p*-value]	
	With industry dummies	With industry characteristics
Industry characteristics		
Herfindahl Index$_{i,t-1}$		-0.000 [0.92]
Industry Homogeneity$_{i,t-1}$		-2.836 [0.28]
Industry Downturn$_{i,t-1}$		1.308 [0.12]
Industry Downturn$_{i,t-1}$ × *Leverage*$_{i,t-1}$		-7.935 [0.03]
Industry dummies		
Consumer$_{i,t}$	1.378 [0.08]	
Manufacturing$_{i,t}$	1.878 [0.05]	
High Tech$_{i,t}$	1.977 [0.08]	
Health$_{i,t}$	2.364 [0.02]	
Other$_{i,t}$ *(base industry)*	---	
Industry dummies	Yes	No
No. of observations	812	812
Likelihood ratio	197.95	188.23

Table 4
Committee size, frequency, and composition

This table presents summary statistics on committee size, frequency, and composition. Panel A presents the average committee sizes as well as the frequency in which boards have certain committees. Panel B presents the average proportion of committee members who are insiders, gray outsiders, or independent. Affiliated directors comprise the union of insiders and gray outsiders. Asterisks (*) denote committees with membership restrictions. A cross (†) denotes that no membership restrictions were in place until 2003.

	Audit*	Comp.*	Gov./Nom.†	Finance	Social resp.	Executive	Pension	Sci./Tech.	Remaining
Panel A. Committee size and frequency									
Committee size	4.8	4.5	5.1	5.1	5.5	4.6	5.1	4.1	4.8
No. of occurrences	812	812	772	432	395	524	283	56	164
[% frequency]	[100]	[100]	[95]	[53]	[49]	[65]	[35]	[7]	[20]
Panel B. Proportion of committee members who are insiders, gray outsiders, or independent									
Affiliated directors	0.09	0.05	0.12	0.24	0.19	0.44	0.16	0.16	0.27
Inside	0.00	0.00	0.02	0.12	0.06	0.32	0.06	0.05	0.10
Gray outside	0.09	0.05	0.10	0.12	0.14	0.12	0.10	0.11	0.17
Independent directors	0.91	0.95	0.88	0.76	0.81	0.56	0.84	0.84	0.73

Table 5
Determinants of board committees

This table presents estimates from the following pooled logistic regression:

$$CommitteeIndicator_{i,t} = \alpha + X_{i,t}\lambda + Industry_{i,t}\gamma + \varepsilon_{i,t}$$

Committee Indicator$_{i,t}$, the dependent variable, is an indicator variable that equals one if the board of firm *i* in year *t* has the committee in question, and zero otherwise. *P*-values account for clustering (by firm).

Variable	Coefficient estimate [*p*-value]											
	Regressions with industry dummies						Regressions with industry characteristics					
	Gov. / Nom.†	Fin.	Social resp.	Exec.	Pens.	Sci. / Tech.	Gov. / Nom.†	Fin.	Social resp.	Exec.	Pens.	Sci. / Tech.
Board and governance characteristics												
log(Board Size$_{i,t}$*)*	-2.489	1.600	2.028	1.661	2.439	3.438	-2.333	1.556	2.249	1.630	2.505	3.421
	[0.10]	[0.08]	[0.02]	[0.06]	[0.01]	[0.11]	[0.19]	[0.10]	[0.02]	[0.06]	[0.01]	[0.10]
Family Firm$_{i,t}$	-0.601	2.802	-1.634	0.006	0.910	4.018	-1.699	2.241	-1.488	-0.019	0.491	2.747
	[0.70]	[0.01]	[0.07]	[0.99]	[0.31]	[0.00]	[0.13]	[0.08]	[0.08]	[0.98]	[0.58]	[0.00]
Entrenchment Index$_{i,t}$	0.509	0.455	0.124	0.009	0.380	0.641	0.211	0.529	0.044	0.000	0.453	0.370
	[0.14]	[0.01]	[0.52]	[0.96]	[0.03]	[0.10]	[0.56]	[0.00]	[0.82]	[0.99]	[0.01]	[0.38]
DE Incorporated$_{i,t}$	-0.909	-0.827	0.090	-0.600	-0.472	-0.708	-0.501	-0.677	0.181	-0.673	-0.287	-0.905
	[0.27]	[0.09]	[0.84]	[0.25]	[0.37]	[0.36]	[0.58]	[0.18]	[0.68]	[0.19]	[0.60]	[0.21]
Firm characteristics												
log(Assets$_{i,t-1}$*)*	0.303	0.062	0.699	-0.274	-0.248	-0.904	0.769	0.169	0.136	-0.171	-0.143	-0.722
	[0.34]	[0.78]	[0.02]	[0.26]	[0.23]	[0.19]	[0.06]	[0.52]	[0.59]	[0.52]	[0.53]	[0.34]
log(Firm Age$_{i,t}$*)*	0.828	0.080	0.075	-0.00	-0.059	-0.784	0.664	0.087	0.175	-0.200	0.053	-0.274
	[0.02]	[0.74]	[0.79]	[0.99]	[0.83]	[0.21]	[0.04]	[0.72]	[0.57]	[0.43]	[0.85]	[0.69]
Leverage$_{i,t-1}$	9.088	-0.670	0.186	2.925	1.650	-2.849	4.141	-1.102	2.408	1.519	1.269	-6.006
	[0.02]	[0.72]	[0.91]	[0.17]	[0.39]	[0.40]	[0.33]	[0.52]	[0.16]	[0.42]	[0.49]	[0.08]
ROA$_{i,t-1}$	17.172	2.227	1.544	5.438	-1.896	3.112	8.885	-0.298	2.230	4.083	-3.016	-0.024
	[0.01]	[0.45]	[0.68]	[0.11]	[0.51]	[0.55]	[0.15]	[0.92]	[0.57]	[0.23]	[0.30]	[0.99]
$\sigma^2_{i,t-1}$	6.429	7.878	-1.202	-10.223	5.514	-35.284	0.410	8.274	-13.532	-5.192	7.725	-5.732
	[0.46]	[0.24]	[0.85]	[0.16]	[0.44]	[0.01]	[0.97]	[0.24]	[0.04]	[0.42]	[0.27]	[0.67]

Table 5 continued.

Variable	Coefficient estimate [*p*-value]											
Diverse$_{i,t-1}$	0.404	-0.037	0.532	0.217	-0.122	2.315	0.321	0.055	0.733	0.179	-0.010	1.347
	[0.53]	[0.92]	[0.17]	[0.57]	[0.76]	[0.02]	[0.58]	[0.89]	[0.08]	[0.65]	[0.98]	[0.33]
CAPEX / Assets$_{i,t-1}$	-12.656	-4.607	10.982	1.341	-2.357	-39.546	-7.700	0.669	1.903	1.166	2.774	-17.649
	[0.07]	[0.37]	[0.06]	[0.80]	[0.70]	[0.00]	[0.35]	[0.89]	[0.72]	[0.83]	[0.65]	[0.05]
R&D / Sales$_{i,t-1}$	18.426	4.395	4.626	0.024	6.337	6.770	19.834	2.950	1.910	-0.198	4.849	3.685
	[0.20]	[0.01]	[0.49]	[0.98]	[0.03]	[0.00]	[0.32]	[0.10]	[0.45]	[0.84]	[0.05]	[0.02]
Post-regulation dummy												
PostReg$_{i,t}$	12.015	-0.115	-0.114	-0.054	0.143	1.412	12.405	-0.035	-0.232	-0.252	0.328	1.035
	[0.00]	[0.61]	[0.69]	[0.83]	[0.55]	[0.04]	[0.00]	[0.88]	[0.39]	[0.31]	[0.21]	[0.05]
Industry characteristics												
Herfindahl Index$_{i,t-1}$							-0.000	0.001	-0.000	-0.000	-0.000	-0.000
							[0.38]	[0.03]	[0.58]	[0.80]	[0.08]	[0.40]
Industry Homogeneity$_{i,t-1}$							-1.836	-0.856	5.711	2.092	-2.546	-0.265
							[0.62]	[0.71]	[0.01]	[0.38]	[0.23]	[0.95]
Industry dummies												
Consumer$_{i,t}$	-4.168	-0.032	1.672	-1.991	0.473	-8.832						
	[0.00]	[0.97]	[0.05]	[0.04]	[0.58]	[0.01]						
Manufacturing$_{i,t}$	-2.408	0.320	2.228	-2.311	0.946	-5.709						
	[0.10]	[0.71]	[0.01]	[0.03]	[0.31]	[0.03]						
High Tech$_{i,t}$	-3.095	0.109	-0.336	-1.370	0.805	-2.954						
	[0.01]	[0.89]	[0.69]	[0.14]	[0.40]	[0.28]						
Health$_{i,t}$	-5.765	-1.524	1.819	-1.658	-0.666	-6.030						
	[0.00]	[0.28]	[0.17]	[0.23]	[0.60]	[0.03]						
Other$_{i,t}$ *(base industry)*	---	---	---	---	---	---						
No. of observations	812	812	812	812	812	812	812	812	812	812	812	812
Likelihood ratio	140.89	182.04	231.33	123.22	165.61	209.55	105.94	193.95	201.01	93.12	169.17	144.00

Table 6
Determinants of director committee involvement

This table presents estimates from the following pooled OLS regression:

$$CommitteeInvolvement_{i,t} = \alpha + \beta \times CEOInvolved_{i,t} + X_{i,t}\lambda + Industry_{i,t}\gamma + \varepsilon_{i,t}$$

Committee Involvement$_{i,t}$, the dependent variable, is the average committee involvement of the directors in question on board *i* in year *t*, where a director's committee involvement refers to the proportion of the board's committees of which he is a member. *CEO Involved* equals one if the CEO is directly involved in apportioning committee assignments (i.e., he is a member of the Governance Committee), and zero otherwise. *T*-statistics are calculated using White-robust standard errors adjusted for clustering (by firm).

Variable	Coefficient estimate (*t*-statistic)							
	Regressions with industry dummies				Regressions with industry characteristics			
	Inside	*Non-CEO inside*	*Gray outside*	*Independent*	*Inside*	*Non-CEO inside*	*Gray outside*	*Independent*
CEO Involved$_{i,t}$	0.137	0.092	0.107	-0.034	0.137	0.088	0.085	-0.036
	(6.03)	(3.44)	(2.58)	(-1.28)	(5.64)	(3.25)	(2.06)	(-1.21)
Board and governance characteristics								
log(Board Size$_{i,t}$*)*	-0.059	0.049	0.142	-0.146	-0.053	0.049	0.102	-0.156
	(-1.42)	(1.29)	(2.22)	(-2.77)	(-1.21)	(1.24)	(1.71)	(-3.09)
No. of Committees$_{i,t}$	0.033	0.017	0.017	-0.018	0.033	0.017	0.019	-0.019
	(4.76)	(3.13)	(1.47)	(-1.83)	(4.96)	(3.36)	(1.70)	(-1.90)
Firm characteristics								
log(Assets$_{i,t-1}$*)*	0.010	-0.000	-0.006	-0.007	0.014	0.007	0.019	-0.011
	(1.03)	(-0.02)	(-0.40)	(-0.65)	(1.38)	(0.67)	(1.46)	(-1.12)
log(Firm Age$_{i,t}$*)*	-0.009	-0.004	-0.016	0.008	-0.010	-0.003	-0.011	0.006
	(-0.86)	(-0.55)	(-0.96)	(0.66)	(-0.92)	(-0.39)	(-0.69)	(0.60)
Leverage$_{i,t-1}$	0.079	-0.007	0.129	0.025	0.039	-0.044	-0.042	0.027
	(0.97)	(-0.12)	(0.97)	(0.33)	(0.45)	(-0.62)	(-0.34)	(0.30)
ROA$_{i,t-1}$	0.025	-0.072	-0.063	0.089	-0.028	-0.121	-0.234	-0.006
	(0.16)	(-0.48)	(-0.25)	(0.64)	(-0.17)	(-0.82)	(-1.09)	(-0.04)
$\sigma^2_{i,t-1}$	-0.751	-0.512	-0.308	-0.089	-0.453	-0.337	-0.128	-0.373
	(-2.78)	(-1.97)	(-0.68)	(-0.37)	(-1.89)	(-1.37)	(-0.34)	(-1.75)

Table 6 continued.

Variable	Coefficient estimate (*t*-statistic)							
Diverse$_{i,t-1}$	0.032	0.029	-0.024	-0.034	0.028	0.019	-0.041	-0.035
	(1.51)	(1.55)	(-0.85)	(-1.59)	(1.36)	(1.21)	(-1.45)	(-1.84)
CAPEX / Assets$_{i,t-1}$	0.078	0.114	0.136	-0.038	0.218	0.198	0.378	0.025
	(0.29)	(0.48)	(0.36)	(-0.15)	(0.87)	(0.97)	(1.20)	(0.12)
R&D / Sales$_{i,t-1}$	-0.152	-0.065	0.262	0.071	-0.160	-0.084	0.181	0.063
	(-3.64)	(-1.42)	(4.12)	(1.51)	(-3.79)	(2.09)	(3.50)	(1.50)
Industry characteristics								
Herfindahl Index$_{i,t-1}$					-0.000	-0.000	0.000	0.000
					(-0.99)	(-0.74)	(2.13)	(2.44)
Industry Homogeneity$_{i,t-1}$					-0.040	-0.133	-0.429	0.075
					(-0.50)	(-2.13)	(-3.16)	(0.74)
Industry Downturn$_{i,t-1}$					-0.028	-0.002	-0.142	-0.024
					(-1.07)	(-0.07)	(-2.88)	(-0.89)
Industry Downturn$_{i,t-1}$ × *Leverage*$_{i,t-1}$					0.129	0.107	0.663	0.169
					(0.99)	(0.99)	(3.39)	(1.30)
Industry dummies								
Consumer$_{i,t}$	-0.014	-0.007	0.072	0.010				
	(-0.41)	(-0.253)	(-1.28)	(0.27)				
Manufacturing$_{i,t}$	-0.044	-0.041	-0.090	0.016				
	(-1.16)	(-1.197)	(-1.48)	(0.39)				
High Tech$_{i,t}$	0.014	-0.003	-0.076	-0.033				
	(0.31)	(-0.087)	(-1.34)	(-0.93)				
Health$_{i,t}$	-0.067	-0.080	-0.144	-0.028				
	(-1.38)	(-2.17)	(-2.02)	(-0.65)				
Other$_{i,t}$ *(base industry)*	---	---	---	---				
No. of observations	812	812	812	812	812	812	812	812
Adjusted R^2	0.26	0.17	0.12	0.20	0.26	0.16	0.14	0.22

Table 7
Director committee involvement, firm value, and subsequent operating performance

This table presents estimates from a pooled OLS regression of firm value (*Tobin's Q*) and subsequent operating performance (*ROA*) on various directors' average committee involvements. *Q* is calculated as the market value of assets scaled by the book value of assets, where the market value of assets is calculated as the book value of assets plus the market value of equity minus the sum of the book value of equity and balance sheet deferred taxes. Subsequent operating performance is calculated as the average net income scaled by total assets over the subsequent three-year period. Also included are log*(Board Meetings$_{i,t}$)*, *log(Board Size$_{i,t}$)*, *No. of Committees$_{i,t}$*, *Fraction of Affiliated Directors$_{i,t}$*, Non-Founder Family Firm$_{i,t}$, *Busy Board$_{i,t}$*, *CEO Pay Slice$_{i,t}$*, *Entrenchment Index$_{i,t}$*, *DE Incorporated$_{i,t}$*, *log(Assets$_{i,t}$)*, *log(Firm Age$_{i,t}$)*, *ROA$_{i,t}$*, *$\sigma^2_{i,t}$*, *Diverse$_{i,t}$*, and *R&D/Sales$_{i,t}$*, as well as year dummies and industry dummies. *T*-statistics are calculated using White-robust standard errors adjusted for clustering by firm.

Variable	Coefficient estimate (*t*-statistic)	
	(1)	(2)
Panel A. Firm value (Tobin's $Q_{i,t}$)		
Affiliated Director Involvement$_{i,t}$	-0.872	
	(-2.47)	
... Insider Involvement$_{i,t}$		-0.720
		(-1.86)
... Gray Outsider Involvement$_{i,t}$		-0.228
		(-1.40)
Overall Director Involvement$_{i,t}$	-0.157	-0.230
	(-0.24)	(-0.37)
Year/industry dummies	Yes / Yes	Yes / Yes
Number of obs.	812	812
Adjusted R^2	0.56	0.56
Panel B. Subsequent operating performance ($ROA_{i,t+1,t+3}$)		
Affiliated Director Involvement$_{i,t}$	-0.038	
	(-1.80)	
... Insider Involvement$_{i,t}$		-0.018
		(-1.06)
... Gray Outsider Involvement$_{i,t}$		-0.010
		(-0.99)
Overall Director Involvement$_{i,t}$	0.008	0.003
	(0.25)	(0.08)
Year/industry dummies	Yes / Yes	Yes / Yes
No. of observations	621	621
Adjusted R^2	0.53	0.53

Table 8
Committee composition when CEO is directly involved

This table compares committee compositions when the CEO is versus when he is not involved in committee assignments. The "Overall board composition" column presents the average proportion of directors on the board who are insiders, gray outsiders, or independent. Affiliated directors comprise the union of insiders and gray outsiders. The remaining columns present specific committee compositions – i.e., the average proportion of committee members who are insiders, gray outsiders, or independent. Panel A presents those firm-years in which the CEO is not directly involved in committee assignments (696 firm-years), and Panel B presents those firm-years in which the CEO is directly involved (108 firm-years). Asterisks (*) denote committees with membership restrictions. A cross (†) denotes that no membership restrictions were in place until 2003.

Director type	Overall board composition	Audit*	Comp.*	Gov./Nom.†	Finance	Social resp.	Executive	Pension	Sci./Tech.	Remaining
Panel A. CEO is not involved										
Affiliated	0.26	0.08	0.05	0.09	0.19	0.19	0.39	0.13	0.16	0.23
Inside	0.16	0.00	0.00	0.00	0.07	0.04	0.29	0.04	0.05	0.09
Gray outside	0.10	0.08	0.05	0.09	0.12	0.15	0.11	0.09	0.11	0.14
Independent	0.74	0.92	0.95	0.91	0.81	0.81	0.61	0.87	0.84	0.77
Committee size	---	4.8	4.5	5.0	4.9	5.4	4.8	5.0	4.2	4.9
No. of obs.	704	704	704	704	373	341	451	251	53	142
Panel B. CEO is involved										
Affiliated	0.41	0.21	0.12	0.43	0.57	0.23	0.72	0.36	0.17	0.54
Inside	0.23	0.00	0.01	0.24	0.43	0.13	0.52	0.21	0.00	0.17
Gray outside	0.18	0.21	0.11	0.19	0.15	0.09	0.20	0.15	0.17	0.37
Independent	0.59	0.79	0.88	0.57	0.43	0.77	0.28	0.64	0.83	0.46
Committee size	---	4.6	4.3	5.8	6.4	5.9	3.6	6.1	3.7	4.6
No. of obs.	108	108	108	68	59	54	73	32	3	22

Table 9
Determinants of committee composition

This table presents estimates from the following pooled OLS regression:

$$CommitteeComposition_{i,t} = \alpha + \beta \times CEOinvolved_{i,t} + X_{i,t} + Industry_{i,t} + \varepsilon_{i,t}$$

Committee Composition, the dependent variable, is the fraction of committee members who are insiders, non-CEO insiders, gray outsiders, or independent directors. *CEO involved* equals one if the CEO is directly involved in apportioning committee assignments (i.e., he is a member of the Governance Committee), and zero otherwise. Also included are $log(Assets_{i,t-1})$, $log(Firm\ Age_{i,t-1})$, $Leverage_{i,t-1}$, $ROA_{i,t-1}$, $\sigma^2_{i,t-1}$, $Diverse_{i,t-1}$, $CAPEX/Assets_{i,t-1}$, and $R\&D/Sales_{i,t-1}$, as well as industry dummies. *T*-statistics are calculated using White-robust standard errors adjusted for clustering (by firm). Asterisks (*) denote committees with membership restrictions. A cross (†) denotes that no membership restrictions were in place until 2003.

Variable	Coefficient estimate (*t*-statistic)								
	Audit*	Comp.*	Gov./Nom.†	Finance	Social resp.	Executive	Pension	Sci./Tech.	Remaining
				Panel A. Inside director					
CEO involved	0.002	0.002	0.232	0.340	0.101	0.247	0.189	-0.013	0.090
	(0.92)	(0.51)	(8.01)	(3.29)	(2.41)	(3.37)	(1.74)	(-0.54)	(0.89)
				Panel B. Non-CEO inside director					
CEO involved	-0.000	0.000	0.046	0.234	0.079	0.239	0.161	-0.035	0.117
	(-0.97)	(0.19)	(1.59)	(3.28)	(2.10)	(4.03)	(1.58)	(-2.17)	(1.17)
				Panel C. Gray outside director					
CEO involved	0.120	0.059	0.095	0.023	-0.075	0.080	0.049	0.098	0.196
	(3.28)	(2.02)	(2.33)	(0.46)	(-3.12)	(1.75)	(0.68)	(7.93)	(3.09)
				Panel D. Independent director					
CEO involved	-0.122	-0.061	-0.327	-0.362	-0.026	-0.328	-0.238	-0.085	-0.285
	(-3.38)	(-2.17)	(-6.92)	(-4.17)	(-0.58)	(-4.14)	(-2.60)	(-3.79)	(-3.13)
No. of observations	812	812	772	432	395	524	283	56	164

Table 10
Changes in unregulated committee composition surrounding shock to CEO involvement

This table presents estimates from the following pooled OLS regression:

$$CommitteeComposition_{i,t} = \alpha + \beta_1 \times \Pr iorInvolvement_{i,t} \times Postreg_{i,t} + \beta_2 \times \Pr iorInvolvement_{i,t} + \beta_3 \times Postreg_{i,t} + X_{i,t}\lambda + Industry_{i,t}\gamma + \varepsilon_{i,t}$$

Committee Composition$_{i,t}$, the dependent variable, is the fraction of committee members who are insiders, non-CEO insiders, gray outsiders, or independent directors. *PriorInvolvement*$_{i,t}$ equals one if (prior to regulatory changes in 2003) the CEO of firm *i* was directly involved in committee assignments, and zero otherwise. *PostReg* equals one in years greater than or equal to 2003, and zero otherwise. Also included are *log(Assets*$_{i,t-1}$*)*, *log(Firm Age*$_{i,t-1}$*)*, *Leverage*$_{i,t-1}$, *ROA*$_{i,t-1}$, $\sigma^2_{i,t-1}$, *Diverse*$_{i,t-1}$, *CAPEX/Assets*$_{i,t-1}$, and *R&D/Sales*$_{i,t-1}$, as well as industry dummies. *T*-statistics are calculated using White-robust standard errors adjusted for clustering (by firm).

Variable	Coefficient estimate (*t*-statistic)					
	Finance	Social resp.	Executive	Pension	Sci./Tech.	Remaining
			Panel A. Inside director			
*PriorInvolvement * PostReg*	-0.222	-0.057	-0.078	-0.074	0.002	-0.063
	(-2.60)	(-2.32)	(-1.07)	(-1.41)	(0.04)	(-0.88)
PriorInvolvement	0.318	0.092	0.195	0.254	-0.040	0.064
	(3.56)	(2.43)	(2.17)	(1.95)	(-0.60)	(1.17)
PostReg	0.016	0.014	-0.021	-0.007	-0.042	-0.058
	(0.73)	(0.83)	(-0.48)	(-0.32)	(-0.85)	(-0.79)
			Panel B. Non-CEO inside director			
*PriorInvolvement * PostReg*	-0.179	-0.062	-0.112	-0.101	0.089	-0.065
	(-4.03)	(-2.71)	(-1.89)	(-1.81)	(2.67)	(-1.30)
PriorInvolvement	0.232	0.075	0.246	0.206	-0.136	0.059
	(3.29)	(2.29)	(3.46)	(1.66)	(-2.48)	(1.30)
PostReg	0.016	0.011	-0.003	-0.010	-0.096	-0.046
	(0.95)	(0.96)	(-0.09)	(-0.51)	(-2.47)	(-0.70)
No. of observations	432	395	524	283	56	164

Table 10 continued.

Variable	Coefficient estimate (*t*-statistic)					
	Finance	Social resp.	Executive	Pension	Sci./Tech.	Remaining
			Panel C. Gray outside director			
*PriorInvolvement * PostReg*	-0.025	-0.034	-0.083	0.014	0.003	-0.164
	(-0.48)	(-0.67)	(-2.32)	(0.22)	(0.04)	(-2.74)
PriorInvolvement	-0.049	-0.069	0.037	-0.002	0.002	0.088
	(-1.18)	(-2.18)	(0.97)	(-0.04)	(0.02)	(1.69)
PostReg	-0.039	0.023	-0.018	-0.045	0.052	-0.027
	(-1.11)	(0.57)	(-0.62)	(-1.68)	(1.17)	(-0.46)
			Panel D. Independent director			
*PriorInvolvement * PostReg*	0.246	0.090	0.161	0.060	-0.005	0.226
	(2.83)	(1.68)	(2.24)	(1.03)	(-0.05)	(2.52)
PriorInvolvement	-0.268	-0.022	-0.233	-0.252	0.038	-0.152
	(-3.15)	(-0.46)	(-2.48)	(-2.41)	(0.40)	(-2.16)
PostReg	0.022	-0.037	0.040	0.052	-0.010	0.086
	(0.56)	(-0.81)	(0.92)	(1.56)	(-0.14)	(1.45)
No. of observations	432	395	524	283	56	164

Table 11
Proportions of directors with conventional or social ties

This table presents pooled means of the proportions of directors with various ties to the CEO or to the firm. Our sample includes all Fortune 100 firms as of 2005 for which we could obtain the necessary financial data. Overall, our data consists of $N = 704$ firm-years over the period 1996 to 2005. The "Affiliation to CEO" column presents general ways in which a director can be affiliated or dependent to the CEO. A conventional affiliation (i.e., conventional dependence) indicates that the director has a financial or familial tie, as specified by the IRRC, to the CEO or to the firm. A social affiliation (i.e., social dependence) indicates that the director and the CEO share at least two of the following ties: miltary service, alma mater, regional origin, background (i.e., academic discipline), industry of primary employment, or third-party connection through another director. Mutual alma mater must be accompanied by no greater than a three-year age difference to constitute a tie between the director and the CEO. Conventional or social signifies that the director is either conventionally or socially affiliated (or both). The "Proportion of affiliated directors" column presents the pooled means, across all firm-years, of the fraction of the board having the specified general affiliation or dependence to the CEO. The "Proportion of affiliated directors with specific tie" columns present the pooled means, across all firm-years, of the fraction of type-*X* affiliated directors having the specific tie *Y* to the CEO.

Affiliation to CEO	Proportion of affiliated directors $\left(\frac{\#\text{ of affiliated directors on the board}}{\#\text{ of all directors on the board}}\right)$	Proportion of affiliated directors with specific tie $\left(\frac{\#\text{ of affiliated directors on the board with specific tie}}{\#\text{ of affiliated directors on the board}}\right)$					
		Military	School	Regional origin	Background	Industry	Third party
Conventional	0.296	0.066	0.390	0.449	0.426	0.660	0.437
Social	0.276	0.089	0.496	0.680	0.602	0.652	0.660
Conventional or social	0.416	0.063	0.310	0.478	0.445	0.522	0.510

Table 12
CEO and board characteristics

This table presents the pooled means of various CEO and board characteristics. *Independent (conventional)* and *Independent (new)* are dummies that equal one if a majority of directors are independent under the classification in question, and zero otherwise. The *conventional measure* classifies a director as affiliated if he has either financial or familial ties, as specified by the IRRC, to the CEO or to the firm. In addition to the conventional criteria, the *new measure* further classifies a director as affiliated if the director and the CEO share at least two of the following ties: miltary service, alma mater, regional origin, background (i.e., academic discipline), industry of primary employment, or third-party connection through another director. Mutual alma mater must be accompanied by no greater than a three-year age difference to constitute a tie between the director and the CEO. The remaining variables are as defined in Appendix F. Column 1 represents all firms, Column 2 represents the subset of firms with conventionally independent boards, Column 3 represents the subset of firms with conventionally-and-socially independent boards, and Column 4 represents the subset of firms with conventionally independent boards that are not conventionally and socially independent.

Variable	All	Conventional	New	Conventional only
Independent (conventional)	0.874	1.000	1.000	1.000
Independent (new)	0.624	0.714	1.000	0.000
CEO Equity Holdings (%)	0.938	0.579	0.547	0.659
CEO Award	0.203	0.218	0.205	0.250
CEO = Chairman	0.835	0.857	0.854	0.864
CEO Tenure	6.777	6.099	5.485	7.631
Board Size	12.298	12.340	12.189	12.717
Old Directors	0.109	0.129	0.118	0.156
Busy Board	0.358	0.387	0.365	0.442
Directors' Equity Holdings (%)	0.289	0.145	0.120	0.207
CEO from Other Company	0.700	0.725	0.736	0.698
Classified Board	0.509	0.515	0.515	0.515
Democracy Firm	0.094	0.079	0.075	0.089
Dictatorship Firm	0.017	0.018	0.018	0.018
Family Firm	0.070	0.054	0.052	0.059
No. of observations	704	615	439	176

Table 13
Determinants of social dependence

This table presents estimates from a pooled regression of the board's social-dependence fraction (i.e., the proportion of directors who are socially dependent to the CEO) on various CEO, board, and firm characteristics. All independent variables are as defined in Appendix F. We include year dummies and industry dummies using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

Variable	Expected sign	Coefficient (*t*-statistic)
$CEO\ Equity\ Holdings_{i,t}$	?	0.000
		(0.47)
$CEO\ Award_{i,t}$	+	0.077
		(2.12)
$CEO = Chairman_{i,t}$	+	0.015
		(0.52)
$CEO\ Tenure_{i,t}$	+	0.007
		(2.11)
$ln(Board\ Size)_{i,t}$	+	-0.065
		(-1.10)
$Old\ Directors_{i,t}$	+	0.263
		(3.12)
$Busy\ Board_{i,t}$	+	0.052
		(2.30)
$Directors\ Equity\ Holdings_{i,t}$	?	0.001
		(0.13)
$CEO\ from\ Other\ Company_{i,t}$	+	-0.018
		(-0.65)
$Classified\ Board_{i,t}$	+	-0.004
		(-0.11)
$Democracy\ Firm_{i,t}$	-	0.062
		(1.17)
$Dictatorship\ Firm_{i,t}$	+	-0.049
		(-0.82)
$Family\ Firm_{i,t}$	+	0.008
		(0.12)
$ROA_{i,t-1}$	+	-0.702
		(-2.95)
$RET_{i,t-1}$	+	0.025
		(1.65)
$ln(Total\ Assets_{i,t-1})$	+	0.004
		(0.28)
$ln(MB_{i,t-1})$	+	0.032
		(1.54)
Year/industry dummies		Yes/Yes
No. of observations		704
Adjusted R^2		0.17

Table 14
Firm characteristics and CEO compensation

This table presents the pooled means of CEO compensation and various firm characteristics. Standard deviations are reported in brackets. *Total Assets* (denoted in millions), *MB*, *ROA*, and *RET* are as defined in Appendix F. *Salary + Bonus* is the sum of base salary and bonus in millions. *Total Compensation* is the CEO's total compensation in millions, defined as the sum of base salary, bonus, long-term incentive payouts, the value of restricted stock grants, and the Black-Scholes value of option grants converted into their stock equivalents using the options' median delta. Column 1 represents all firms, Column 2 represents the subset of firms with conventionally independent boards, Column 3 represents the subset of firms with conventionally-and-socially independent boards, and Column 4 represents the subset of firms with conventionally independent boards that are not conventionally and socially independent. A board is classified as independent if a majority of its members are classified as independent. The *conventional measure* classifies a director as affiliated if he has either financial or familial ties, as specified by the IRRC, to the CEO or to the firm. In addition to the conventional criteria, the *new measure* further classifies a director as affiliated if the director and the CEO share at least two of the following ties: miltary service, alma mater, regional origin, background (i.e., academic discipline), industry of primary employment, or third-party connection through another director. Mutual alma mater must be accompanied by no greater than a three-year age difference to constitute a tie between the director and the CEO.

Variable	All	Conventional	New	Conventional only
Total Assets	96,231 [171,692]	98,016 [177,839]	75,655 [135,644]	153,791 [246,030]
MB	4.159 [4.229]	4.093 [4.210]	3.957 [4.086]	4.432 [4.499]
ROA	0.058 [0.056]	0.058 [0.057]	0.061 [0.055]	0.051 [0.061]
RET	0.227 [0.433]	0.214 [0.427]	0.200 [0.435]	0.249 [0.405]
Salary + Bonus	3.778 [3.148]	3.748 [2.950]	3.419 [2.114]	4.569 [4.289]
Total Compensation	12.755 [14.072]	12.931 [13.677]	11.393 [10.781]	16.767 [18.565]
No. of observations	704	615	439	176

Table 15
Board independence and CEO compensation

This table presents estimates from the following pooled regression:

$$C_{i,t} = \alpha + \beta_1 BoardIndependence_{i,t} + X\,\beta_{2\text{-}19} + Year\,\beta_{20\text{-}28} + Industry\,\beta_{29\text{-}32} + \varepsilon_{i,t}.$$

$C_{i,t}$, the dependent variable, is the level of compensation in millions for the CEO of firm *i* in year *t*. We use two different measures of compensation: *Salary + Bonus* (Columns 1 and 2) and *Total Compensation* (Columns 3 and 4) calculated as the sum of base salary, bonus, long-term incentive payouts, the value of restricted stock grants, and the Black-Scholes value of option grants converted into their stock equivalents using the options' median delta. $BOARD\ INDEPENDENCE_{i,t}$ is a dummy that equals one if a majority of directors are classified as independent, and zero otherwise. We compare two classification schemes of independence. The *conventional measure* (Columns 1 and 3) classifies a director as affiliated if he has either financial or familial ties, as specified by the IRRC, to the CEO or to the firm. In addition to the conventional criteria, the *new measure* (Columns 2 and 4) further classifies a director as affiliated if the director and the CEO share at least two of the following ties: miltary service, alma mater, regional origin, background (i.e., academic discipline), industry of primary employment, or third-party connection through another director. Mutual alma mater must be accompanied by no greater than a three-year age difference to constitute a tie between the director and the CEO. *X* is a set of the following control variables: $ln(Total\ Assets_{i,t-1})$, $ln(MB_{i,t-1})$, $ROA_{i,t-1}$, $RET_{i,t-1}$, $\sigma^2_{i,t-1}$, $CEO\ Equity\ Holdings_{i,t}$, $CEO\ Award_{i,t}$, $CEO{=}Chairman_{i,t}$, $CEO\ Tenure_{i,t}$, $ln(Board\ Size_{i,t})$, $Old\ Directors_{i,t}$, $Busy\ Board_{i,t}$, $Directors\ Equity\ Holdings_{i,t}$, $CEO\ from\ Other\ Company_{i,t}$, $Classified\ Board_{i,t}$, $Democracy\ Firm_{i,t}$, $Dictatorship\ Firm_{i,t}$, and $Family\ Firm_{i,t}$, which are as defined in Appendix F. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$. *Industry* denotes the industry dummies using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

		Coefficient (*t*-statistic)			
		Salary + Bonus		*Total Compensation*	
Variable	Expected sign	(1)	(2)	(3)	(4)
$BOARD\ INDEPENDENCE_{i,t,conventional}$	-	-0.755		0.572	
		(-1.16)		(0.24)	
$BOARD\ INDEPENDENCE_{i,t,new}$	-		-0.780		-3.347
			(-2.31)		(-2.50)
$ln(Total\ Assets_{i,t-1})$	+	1.057	1.066	3.337	3.355
		(5.38)	(5.60)	(4.12)	(4.47)
$ln(MB_{i,t-1})$	+	0.696	0.631	3.717	3.364
		(2.56)	(2.39)	(2.44)	(2.44)
$ROA_{i,t-1}$	+	-1.062	0.142	2.022	8.403
		(-0.31)	(0.04)	(0.10)	(0.45)
$RET_{i,t-1}$	+	0.477	0.444	6.315	6.129
		(2.05)	(1.90)	(4.06)	(3.92)

Table 15 continued.

$\sigma^2_{i,t-1}$	?	13.024	16.329	196.483	214.860
		(0.42)	(0.53)	(1.07)	(1.10)
CEO Equity Holdings$_{i,t}$	?	-0.141	-0.134	-0.300	-0.269
		(-3.48)	(-3.38)	(-1.45)	(-1.30)
CEO Award$_{i,t}$	+	0.016	-0.070	1.051	0.747
		(0.04)	(-0.19)	(0.51)	(0.38)
CEO = Chairman$_{i,t}$	+	1.097	1.064	3.344	3.722
		(3.33)	(3.39)	(1.60)	(1.84)
CEO Tenure$_{i,t}$	+	0.030	0.025	0.084	0.023
		(1.28)	(0.94)	(0.79)	(0.18)
ln(Board Size)$_{i,t}$	+	-0.048	-0.020	-3.995	-3.799
		(-0.09)	(-0.04)	(-2.00)	(-1.80)
Old Directors$_{i,t}$	+	3.641	3.334	4.798	2.689
		(3.43)	(3.23)	(1.38)	(0.75)
Busy Board$_{i,t}$	+	0.202	0.105	0.178	-0.104
		(0.69)	(0.36)	(0.12)	(-0.07)
Directors Equity Holdings$_{i,t}$	-	0.020	0.012	-0.223	-0.556
		(0.09)	(0.06)	(-0.39)	(-1.05)
CEO from Other Company$_{i,t}$	+	0.356	0.422	2.505	3.108
		(0.75)	(0.94)	(1.62)	(1.99)
Classified Board$_{i,t}$	+	-0.343	-0.350	0.702	0.720
		(-0.94)	(-1.00)	(0.50)	(0.53)
Democracy Firm$_{i,t}$	-	-1.291	-1.285	1.681	1.744
		(-2.17)	(-2.08)	(0.51)	(0.58)
Dictatorship Firm$_{i,t}$	+	1.467	1.494	-3.184	-3.113
		(1.81)	(1.95)	(-1.35)	(-1.42)
Family Firm$_{i,t}$	+	0.880	0.903	3.304	3.309
		(0.74)	(0.78)	(1.07)	(1.27)
Year/industry dummies		Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
No. of observations		704	704	704	704
Adjusted R^2		0.35	0.36	0.20	0.21

Table 16
Compensation differential within subsample of conventionally independent boards

This table presents estimates from the following pooled regression, within the subset of firms with conventionally independent boards:

$$C_{i,t} = \alpha + \beta_1 NOT\ INDEPENDENT_{i,t} + X\,\beta_{2\text{-}19} + Year\ \beta_{20\text{-}28} + Industry\ \beta_{29\text{-}32} + \varepsilon_{i,t}.$$

$C_{i,t}$, the dependent variable, is the level of compensation in millions for the CEO of firm *i* in year *t*. We use two different measures of compensation: *Salary + Bonus* (Column 1) and *Total Compensation* (Column 2). $NOT\ INDEPENDENT_{i,t}$ is a dummy that equals one if the board (despite being conventionally independent) is not conventionally and socially independent, and zero otherwise. *X* is a set of the following control variables: $ln(Total\ Assets_{i,t-1})$, $ln(MB_{i,t-1})$, $ROA_{i,t-1}$, $RET_{i,t-1}$, $\sigma^2_{i,t-1}$, $CEO\ Equity\ Holdings_{i,t}$, $CEO\ Award_{i,t}$, $CEO{=}Chairman_{i,t}$, $CEO\ Tenure_{i,t}$, $ln(Board\ Size_{i,t})$, $Old\ Directors_{i,t}$, $Busy\ Board_{i,t}$, $Directors\ Equity\ Holdings_{i,t}$, $CEO\ from\ Other\ Company_{i,t}$, $Classified\ Board_{i,t}$, $Democracy\ Firm_{i,t}$, $Dictatorship\ Firm_{i,t}$, and $Family\ Firm_{i,t}$, which are as defined in Appendix F. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$. *Industry* denotes the industry dummies using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

		Coefficient (*t*-statistic)	
Variable	Expected sign	*Salary + Bonus* (1)	*Total Compensation* (2)
$NOT\ INDEPENDENT_{i,t}$	+	0.595 (1.71)	4.079 (2.69)
Year/industry dummies		Yes/Yes	Yes/Yes
No. of observations		615	615
Adjusted R^2		0.35	0.19

Table 17
Excess compensation and subsequent operating performance

This table presents estimates from the following pooled regression, within the subset of firms with conventionally independent boards:

$$Performance_{i,t+1,t+3} = \alpha + PredictedExcessCompensation_{i,t}\,\beta_{1\text{-}2} + X\,\beta_{3\text{-}5} + Year\,\beta_{16\text{-}14} + Industry\,\beta_{15\text{-}18} + \varepsilon_{i,t}.$$

$Performance_{i,t+1,t+3}$, the dependent variable, is the operating performance averaged over the subsequent one-, two-, or three-year period. We use three different measures of operating performance: *Return on Assets (ROA)*, *Return on Sales (ROS)*, and *Return on Equity (ROE)*. *Predicted Excess Compensation*$_{i,t}$ consists of two variables: *Excess(NOT INDEPENDENT*$_{i,t}$*)*, the predicted excess compensation attributed to having a board that is not conventionally and socially independent (despite being conventionally independent); and *Excess(Other Governance Variables*$_{i,t}$*)*, the predicted excess compensation from the remaining governance variables: *CEO Equity Holdings*, *CEO=Chairman*, *ln(Board Size)*, *Old Directors*, *Busy Board*, *Directors' Equity Holdings*, *CEO from Other Company, Classified Board*, *Democracy Firm*, *Dictatorship Firm*, and *Family Firm*, which are as defined in Appendix F. Predicted excess components of total compensation are calculated using the coefficient estimates from Table 16, and are scaled by total compensation. *X* is a set of the following control variables: *ln(Total Assets*$_{i,t}$*)*, *ln(MB*$_{i,t-1}$*)*, and $\sigma^2_{i,t}$, which are also as defined in Appendix F. *Year* denotes the year dummies, *Year*$_{1997}$ through *Year*$_{2005}$. *Industry* denotes the industry dummies using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

		Coefficient (*t*-statistic)		
Variable	Expected sign	One-year	Two-year	Three-year
Return on Assets (ROA)				
Excess(NOT INDEPENDENT$_{i,t}$*)*	-	-0.010	-0.011	-0.010
		(-1.89)	(-2.10)	(-2.46)
Return on Sales (ROS)				
Excess(NOT INDEPENDENT$_{i,t}$*)*	-	-0.011	-0.012	-0.012
		(-1.72)	(-1.86)	(-2.24)
Return on Equity (ROE)				
Excess(NOT INDEPENDENT$_{i,t}$*)*	-	-0.019	-0.018	-0.016
		(-2.61)	(-2.54)	(-2.08)
Year/industry dummies		Yes/Yes	Yes/Yes	Yes/Yes
No. of observations		602	533	462

Table 18
Pay-performance differential within subsample of conventionally independent boards

This table presents estimates from the following pooled regression, within the subset of firms with conventionally independent boards:

$C_{i,t} = \alpha + \beta_1 Ret_{i,t} + \beta_2 Ret_{i,t}$*$NOT\ INDEPENDENT_{i,t} + Interact\ \beta_{3\text{-}15} + Year\ \beta_{16\text{-}24} + Industry\ \beta_{25\text{-}28} + \varepsilon_{i,t}$.

$C_{i,t}$, the dependent variable, is the percentage change in the level of compensation for the CEO of firm *i* in year *t*. We use two different measures of compensation: *Salary + Bonus* (Columns 1 and 2) and *Total Compensation* (Columns 3 and 4). $RET_{i,t}$ is the annual stock return from year *t*. $NOT\ INDEPENDENT_{i,t}$ is a dummy that equals one if the board (despite being conventionally independent) is not conventionally and socially independent, and zero otherwise. *INTERACT* is a set of additional interaction terms in which $RET_{i,t}$ is interacted with each of the following variables: $CEO\ Award_{i,t}$, $CEO{=}Chairman_{i,t}$, $CEO\ Tenure_{i,t}$, $ln(Board\ Size_{i,t})$, $Old\ Directors_{i,t}$, $Busy\ Board_{i,t}$, $Directors\ Equity\ Holdings_{i,t}$, $CEO\ from\ Other\ Company_{i,t}$, $Classified\ Board_{i,t}$, $Democracy\ Firm_{i,t}$, $Dictatorship\ Firm_{i,t}$, $Family\ Firm_{i,t}$, and $\sigma^2_{i,t}$, which are as defined in Appendix F. Columns 1 and 3 report results from excluding these interaction terms, and Columns 2 and 4 report results from including these interaction terms. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$. *Industry* denotes the industry dummies using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

		Coefficient (*t*-statistic)			
		Salary + Bonus		*Total Compensation*	
Variable	Expected sign	(1)	(2)	(3)	(4)
$RET_{i,t}$	+	0.268	-0.534	0.636	5.234
		(4.12)	(-1.01)	(2.27)	(2.83)
$RET_{i,t}$ * $NOT\ INDEPENDENT_{i,t}$	-		-0.058		-0.511
			(-0.53)		(-1.83)
Year/industry dummies		Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
No. of observations		615	615	615	615
Adjusted R^2		0.08	0.10	0.08	0.16

Table 19
Turnover differential within subsample of conventionally independent boards

This table presents estimates from the following pooled logit model, within the subset of firms with conventionally independent boards:

$$Turnover_{i,t} = \alpha + \beta_1 Ret_{i,t-1} + \beta_2 Ret_{i,t-1} * NOT\ INDEPENDENT_{i,t-1} + \beta_3 NOT\ INDEPENDENT_{i,t-1} + Interact\ \beta_{4\text{-}15} + X\ \beta_{16\text{-}28} + Year\ \beta_{29\text{-}36} + Industry\ \beta_{37\text{-}40} + \varepsilon_{i,t}.$$

$Turnover_{i,t}$, the dependent variable, is a dummy that equals one if a CEO turnover occurs at firm *i* in year *t*, and zero otherwise. $RET_{i,t-1}$ is the annual stock return from year *t*-1. $NOT\ INDEPENDENT_{i,t-1}$ is a dummy that equals one if in year *t-1* the board (despite being conventionally independent) is not conventionally and socially independent, and zero otherwise. *X* is a set of the following control variables: $CEO\ Award_{i,t-1}$, $CEO{=}Chairman_{i,t-1}$, $CEO\ Tenure_{i,t-1}$, $ln(Board\ Size_{i,t-1})$, $Old\ Directors_{i,t-1}$, $Busy\ Board_{i,t-1}$, $Directors\ Equity\ Holdings_{i,t-1}$, $CEO\ from\ Other\ Company_{i,t-1}$, $Classified\ Board_{i,t-1}$, $Democracy\ Firm_{i,t-1}$, $Dictatorship\ Firm_{i,t-1}$, $Family\ Firm_{i,t-1}$ (which are as defined in Appendix F), and $CEO\ Age_{i,t-1}$. *INTERACT* is a set of additional interaction terms in which $RET_{i,t-1}$ is interacted with each of the variables in *X*, except for $CEO\ Age_{i,t-1}$. *Year* denotes the year dummies, $Year_{1998}$ through $Year_{2005}$. Because this regression involves lagged board-structure variables, which are unavailable in 1995, we begin our analysis in 1997. *Industry* denotes the industry dummies using the Fama-French (1997) five-industry classification. All *p*-values account for clustering (by firm).

		Coefficient (*p*-value)
Variable	Expected sign	Turnover
$RET_{i,t-1}$	-	-2.202
		(0.67)
$RET_{i,t-1}$ * $NOT\ INDEPENDENT_{i,t-1}$	+	1.691
		(0.18)
$NOT\ INDEPENDENT_{i,t-1}$	-	-0.574
		(0.09)
Year/industry dummies		Yes/Yes
No. of observations		601
Likelihood ratio		76.95

Table 20
Bonus differential within subsample of conventionally independent audit committees

This table presents estimates from the following pooled regression, within the subset of firms whose audit committees are composed entirely of conventionally independent directors:

$$Bonus_{i,t} = \alpha + \beta_1 NOT\ INDEPENDENT_{i,t} + \beta_2 OtherComp_{i,t} + X\,\beta_{3\text{-}20} + Year\,\beta_{21\text{-}27} + Industry\,\beta_{28\text{-}31} + \varepsilon_{i,t}.$$

$Bonus_{i,t}$, the dependent variable, is the bonus in millions for the CEO of firm i in year t. $NOT\ INDEPENDENT_{i,t}$ is a dummy that equals one if the audit committee (despite being composed entirely of conventionally independent directors) has one or more directors who are socially dependent to the CEO, and zero otherwise. $OtherComp_{i,t}$ is the CEO's total compensation salary minus bonus. X is a set of the following control variables: $ln(Total\ Assets_{i,t-1})$, $ln(MB_{i,t-1})$, $ROA_{i,t-1}$, $RET_{i,t-1}$, $\sigma^2_{i,t-1}$, $CEO\ Equity\ Holdings_{i,t}$, $CEO\ Award_{i,t}$, $CEO{=}Chairman_{i,t}$, $CEO\ Tenure_{i,t}$, $ln(Board\ Size_{i,t})$, $Old\ Directors_{i,t}$, $Busy\ Board_{i,t}$, $Directors\ Equity\ Holdings_{i,t}$, $CEO\ from\ Other\ Company_{i,t}$, $Classified\ Board_{i,t}$, $Democracy\ Firm_{i,t}$, $Dictatorship\ Firm_{i,t}$, and $Family\ Firm_{i,t}$, which are as defined in Appendix F. *Year* denotes the year dummies, $Year_{1999}$ through $Year_{2005}$. Because this regression involves audit committee data (which are not available until after 1997), we begin our analysis in 1998. *Industry* denotes the industry dummies using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

		Coefficient (*t*-statistic)
Variable	Expected sign	Bonus
$NOT\ INDEPENDENT_{i,t}$	+	0.734 (1.75)
Year/industry dummies		Yes/Yes
No. of observations		507
Adjusted R^2		0.35

Table 21
Sensitivity tests

This table presents the results from a range of sensitivity tests examining different specifications of board-independence cutoffs. As in Table 15, we estimate the following pooled regression:

$$C_{i,t} = \alpha + \beta_1 BoardIndependence_{i,t} + X\,\beta_{2\text{-}19} + Year\,\beta_{20\text{-}28} + Industry\,\beta_{29\text{-}32} + \varepsilon_{i,t}.$$

We use two different measures of $C_{i,t}$ (in millions): *Salary + Bonus* (Panel A) and *Total Compensation* (Panel B). In Columns 1 through 3, *BOARD INDEPENDENCE*$_{i,t}$ is a dummy that equals one if the board is classified as independent (under the criteria in question), and zero otherwise. In Column 1, we require that a 50% majority of directors be independent; in Column 2, we require that a 60% majority of directors be independent; and in Column 3, we require that all members of the compensation committee be independent. In regressions using the 60% cutoff, we also include a mixed-board dummy that equals one if the percentage of independent directors is between 40% and 60%, and zero otherwise. For regressions involving compensation committee information, our analyses begin in 1998 in accordance with data availability. In Column 4, we define *BOARD INDEPENDENCE*$_{i,t}$ as the fraction of directors that are independent. In Column 5, we define *BOARD INDEPENDENCE*$_{i,t}$ as the board's average number of ties per director, which is calculated by dividing the total number of director-CEO ties by the number of directors for that firm-year. For each of these measures of board independence, we present the results from using two different specifications of director independence. In the first row, we consider only the conventional ties, and in the second row, we augment the conventional criteria with our social criteria (consisting of restrictions on mutual alma mater, military service, regional origin, discipline, industry, and third-party connections). X is a set of control variables as listed in Table 15. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$. *Industry* denotes the industry dummies using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

	Coefficient (*t*-statistic)				
	Independent if ≥ 50% of directors independent	Independent if ≥ 60% of directors independent	Independent if all compensation committee members independent	Fraction of independent directors	Average number of ties
	(1)	(2)	(3)	(4)	(5)
Expected sign	-	-	-	-	+
Panel A. *Salary + Bonus*					
Conventional ties only	-0.755 (-1.16)	-1.695 (-1.65)	-0.410 (-0.78)	-1.291 (-0.74)	1.291 (0.74)
Conventional and social ties	-0.780 (-2.31)	-1.424 (-2.38)	-0.917 (-2.24)	-2.335 (-2.09)	0.808 (1.76)
Panel B. *Total Compensation*					
Conventional ties only	0.572 (0.24)	-3.574 (-0.87)	-1.559 (-0.76)	0.876 (0.19)	-0.876 (-0.19)
Conventional and social ties	-3.347 (-2.50)	-5.353 (-2.35)	-3.018 (-1.96)	-6.983 (-1.94)	3.522 (2.21)

Table 22
Conventional and Social Ties between CEOs and Audit Committee Members

This table presents summary statistics on the fraction of audit-committee members with various ties to the CEO. Our sample includes all Fortune 100 firms as of 2005 for which we could obtain the necessary data. Overall, our data consists of 596 firm-years over the period 1998 to 2005. We present the pooled means and standard deviations, across all firm-years, of the fraction of audit-committee members having the specified tie to the CEO. In terms of the social ties: the *military tie* signifies that the member and the CEO both served in the military; the *school tie* signifies that both graduated from the same university and have no greater than a three-year age difference; the *regional tie* signifies that both were born in the same US region or in the same non-US country; the *background tie* signifies that both obtained a degree in the same academic discipline*; the industry tie* signifies that both are primarily employed in the same industry (based on the Fama-French (1997) 49-industry classification); the *third-party tie* signifies that there is a common third party with whom each shares at least two direct social ties. In terms of the conventional ties: the *current employee (former employee) tie* signifies that the audit-committee member is a current (former) employee of the company; the *charitable contributions tie* requires signifies that member is an employee of an organization that receives charitable gifts from the company; the *business relation tie* signifies that the member or the member's employer is a customer of or supplier to the company; the *professional services tie* signifies that the member or the member's employer provides legal, consulting, or financial services to the company; the *relative tie* signifies that the member is a relative of an executive officer; the *interlocked tie* signifies that the member is interlocked with an executive of the firm; the *other tie* signifies that the member is affiliated with the company in some manner other than current/former employee, charity, business transaction, family relation, interlocking directorship, or designated director).

Tie	Proportion of Audit-Committee Members with Tie	
	Mean	Standard Deviation
Military	0.027	0.092
Alma Mater	0.021	0.072
Regional Origin	0.157	0.189
Discipline	0.180	0.228
Industry	0.026	0.097
Third Party	0.034	0.120
Current Employee	0.001	0.015
Former Employee	0.027	0.079
Charitable Contributions	0.001	0.018
Business Relation	0.017	0.067
Professional Services	0.052	0.118
Relative	0.003	0.027
Interlocked	0.014	0.058
Other	0.000	0.000
No. of observations	956	956

Table 23
Audit Committee, CEO, and Firm Characteristics

This table presents summary statistics of various audit-committee, CEO, and firm characteristics. *Conventional Index* is the audit committee's average number of conventional ties (per committee member) to the CEO. *Social Index* is the average number of social ties to the CEO. *Conventional–and-Social Index* is the average number of conventional and social ties to the CEO. An audit-committee member has a *conventional tie* to the CEO if he is (1) a current employee, (2) a former employee, (3) a recipient of charitable funds, (4) a customer of or a supplier to the firm, (5) a provider of professional services, (6) a relative of an executive officer, (7) interlocked with an executive of the firm, or (8) if he shares any other affiliations with the company. An audit-committee member has a *social tie* to the CEO if they both (1) served in the military, (2) graduated from the same university, (3) were born in the same US region or in the same non-US country, (4) share a degree in the same academic discipline, (5) are primarily employed in the same industry (based on the Fama-French (1997) 49-industry classification); or (6) share a common third-party tie with whom each shares at least two direct social ties. Mutual alma mater must be accompanied by no greater than a three-year age difference to constitute a social tie between the director and the CEO. *Audit Committee Size* is the number of directors on the audit committee. *Old Directors on Audit Committee* is calculated as the proportion of audit-committee members over the age of 69. *Busy Audit Committee* is a dummy that equals one if a majority of the independent audit-committee members concurrently serve on three or more boards, and zero otherwise. *Audit Committee Members' Equity Holdings* is the average percentage of the company's shares owned by members of the audit committee. *CEO from Other Company on Audit Committee* is a dummy that equals one if at least one of the directors on the audit committee is the CEO of another firm, and zero otherwise. *CEO Equity Holdings* is the percentage of the company's shares owned by the CEO. *CEO Award* is a dummy that equals one if the CEO has ever won the 'Business Week Best Manager Award', and zero otherwise. *CEO = Chairman* is a dummy that equals one if the CEO is the chairman of the board, and zero otherwise. *CEO Tenure* is calculated as the year in question minus the year of the CEO's appointment. *Classified Board* is a dummy that equals one if the firm has a classified-board provision, and zero otherwise. *Democracy Firm* is equal to one if the firm's GIM index is less than or equal to five, and zero otherwise. *Dictatorship Firm* is equal to one if the firm's GIM index is greater than or equal to fourteen, and zero otherwise. *Family Firm* is a dummy that equals one if at least one relative of the founder is an officer, a director, or a 5%-minimum blockholder (either individually or as a group) and the founder is no longer chairman nor CEO of the firm, and zero otherwise. $|AAC|$ is the absolute abnormal accrual as defined in the text (Section 3.B). *Total Assets* is total assets in millions. *Long-Term Debt* is long-term debt over total assets. *MB* is the market value of equity over the book value of equity plus deferred taxes. *Neg.NI* is a dummy that equals one if the firm had two consecutive years of negative income. *Analyst Coverage* is the number of analysts providing one-year earnings forecasts.

Variable	Mean	Standard Deviation
Panel A: Audit-Committee Affiliation Index		
Conventional Index	0.114	0.183
Social Index	0.445	0.408
Conventional–and-Social Index	0.559	0.449
Panel B: Other Audit-Committee Characteristics		
Audit Committee Size	4.637	1.413
Old Directors on Audit Committee	0.111	0.172
Busy Audit Committee	0.405	0.491
Audit Committee Members' Equity Holdings (%)	0.038	0.198
CEO from Other Company on Audit Committee	0.531	0.500

Table 23 continued.

Variable	Mean	Standard Deviation
Panel C:CEO and Other Governance/Anti-Takeover Characteristics		
CEO Equity Holdings (%)	0.826	14.767
CEO Award	0.178	0.383
CEO = Chairman	0.813	0.390
CEO Tenure	5.788	6.700
Classified Board	0.537	0.499
Democracy Firms	0.090	0.286
Dictatorship Firms	0.036	0.185
Family Firm	0.083	0.275
Panel D: Firm Characteristics		
AAC	-0.007	0.542
|AAC|[45]	0.229	0.455
Total Assets	65,837	128,270
Long-Term Debt	0.211	0.157
MB	4.479	5.191
Neg.NI	0.024	0.153
Analyst Coverage	20.149	7.800
No. of observations	956	---

[45] This variable has 949 observations, with medians of -0.011 and 0.064 for the signed and unsigned values, respectively.

Table 24
Correlation Matrix

This table presents a correlation matrix for various audit-committee, CEO, and firm characteristics. All variables are as defined in Table 23.

	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Conventional Index	1.00									
(2)	Social Index	0.01	1.00								
(3)	Conventional-and-Social Index	0.42	0.91	1.00							
(4)	Audit Committee Size	-0.03	0.05	0.03	1.00						
(5)	Old Directors on Audit Committee	0.04	0.10	0.11	0.09	1.00					
(6)	Busy Audit Committee	-0.27	0.06	-0.06	0.04	-0.10	1.00				
(7)	Audit Committee Members' Equity Holdings (%)	0.12	-0.03	0.02	-0.02	0.05	-0.01	1.00			
(8)	CEO from Other Company on Audit Committee	-0.17	0.10	0.02	0.13	-0.10	0.31	0.11	1.00		
(9)	CEO Equity Holdings (%)	0.00	0.00	0.00	-0.06	0.03	-0.05	0.02	-0.03	1.00	
(10)	CEO Award	-0.01	0.09	0.08	0.05	-0.08	0.03	-0.03	0.04	-0.03	1.00
(11)	CEO = Chairman	-0.05	0.05	0.03	0.11	0.00	0.01	0.04	0.03	0.03	-0.10
(12)	CEO Tenure	0.17	0.15	0.21	-0.03	0.21	-0.17	-0.06	-0.07	0.00	-0.14
(13)	Classified Board	0.06	-0.04	-0.01	-0.04	-0.05	-0.03	0.02	-0.02	-0.06	-0.14
(14)	Democracy Firms	0.05	0.06	0.07	-0.01	0.05	-0.07	0.08	0.04	-0.02	0.05
(15)	Dictatorship Firms	0.03	-0.02	0.00	0.05	0.00	-0.02	-0.03	-0.02	-0.01	-0.09
(16)	Family Firm	0.02	0.02	0.03	-0.12	0.06	0.00	-0.03	-0.02	0.19	-0.05
(17)	Total Assets	-0.06	0.16	0.12	0.03	0.18	0.07	-0.06	0.07	-0.03	0.03
(18)	Long-Term Debt	-0.01	0.02	0.02	0.07	-0.04	0.04	-0.05	0.04	0.07	-0.08
(19)	MB	0.10	0.11	0.14	-0.03	-0.04	-0.06	0.08	0.05	-0.03	0.08
(20)	Neg.NI	-0.07	-0.02	-0.05	-0.02	0.05	0.09	-0.02	-0.03	-0.01	-0.02
(21)	Analyst Coverage	0.19	0.07	0.14	-0.04	-0.07	-0.04	-0.06	-0.07	-0.05	0.24

Table 24 continued.

	Variable	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1)	Conventional Index											
(2)	Social Index											
(3)	Conventional-and-Social Index											
(4)	Audit Committee Size											
(5)	Old Directors on Audit Committee											
(6)	Busy Audit Committee											
(7)	Audit Committee Members' Equity Holdings (%)											
(8)	CEO from Other Company on Audit Committee											
(9)	CEO Equity Holdings (%)											
(10)	CEO Award											
(11)	CEO = Chairman	1.00										
(12)	CEO Tenure	0.20	1.00									
(13)	Classified Board	0.09	0.03	1.00								
(14)	Democracy Firms	-0.18	0.13	-0.32	1.00							
(15)	Dictatorship Firms	0.03	-0.01	0.16	-0.06	1.00						
(16)	Family Firm	-0.17	0.03	-0.17	0.18	-0.06	1.00					
(17)	Total Assets	0.06	0.07	-0.17	0.18	-0.04	0.00	1.00				
(18)	Long-Term Debt	0.05	-0.11	0.13	-0.05	0.00	0.12	0.07	1.00			
(19)	MB	-0.02	0.01	0.05	0.02	-0.06	-0.02	-0.09	-0.17	1.00		
(20)	Neg.NI	0.02	-0.06	-0.03	-0.05	-0.03	-0.05	-0.04	0.08	-0.01	1.00	
(21)	Analyst Coverage	-0.11	0.01	-0.12	-0.02	-0.09	-0.06	0.03	-0.24	0.30	-0.10	1.00

Table 25
Audit Committee Affiliation and Earnings Management: Abnormal Accruals

This table presents estimates from the following pooled OLS regression:

$$\left|AAC_{i,t}\right| = \alpha + \beta\, AffiliationIndex_{i,t} + X\gamma + Year\lambda + \varepsilon_{i,t}\ .$$

$|AAC_{i,t}|$, the dependent variable, is the absolute value of abnormal accruals as defined in the text (Section 3.B) for firm *i* in year *t*. We compare two different affiliation indices: the *Conventional Index* (Column 1), and the *Conventional-and-Social Index* (Column 2). We also examine the *Social Index* within the subsample of audit committees with no conventional ties to the CEO (Column 3). *X* is a set of control variables. All variables are as defined in Table 23. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

Variables	Expected Sign	Coefficient Estimate (t-statistic)		
		(1)	(2)	(3)
Affiliation Index				
Conventional Index$_{i,t}$	+	0.060		
		(0.76)		
Conventional-and-Social Index$_{i,t}$	+		0.085	
			(2.27)	
Social Index$_{i,t}$				0.085
				(1.80)
Firm Characteristics				
ln(TotalAssets$_{i,t}$)	?	-0.003	-0.007	-0.017
		(-0.22)	(-0.50)	(-1.04)
Long-Term Debt$_{i,t}$	+	0.225	0.207	0.297
		(1.58)	(1.45)	(1.67)
ln(MB$_{i,t-1}$)	+	0.066	0.061	0.053
		(3.35)	(3.15)	(2.26)
Neg.NI$_{i,t-1,t-2}$	+	0.162	0.162	0.211
		(1.17)	(1.18)	(1.36)
Analyst Coverage$_{i,t}$	?	0.006	0.006	0.006
		(2.64)	(2.61)	(2.26)
Other Audit Committee Characteristics				
ln(Audit Committee Size$_{i,t}$)	+	-0.001	-0.002	-0.001
		(-0.02)	(-0.04)	(-0.01)
Old Directors on Audit Committee$_{i,t}$	+	-0.161	-0.178	-0.215
		(-2.11)	(-2.32)	(-1.95)
Busy Audit Committee$_{i,t}$	+	0.089	0.087	0.102
		(2.39)	(2.33)	(2.34)
Audit Committee Members' Equity Holdings$_{i,t}$	?	16.923	17.061	36.414
		(1.50)	(1.51)	(3.37)
CEO from Other Company on Audit Committee$_{i,t}$	+	-0.004	-0.011	-0.029
		(-0.10)	(-0.30)	(-0.60)

Table 25. Continued.

Variables	Expected Sign	Coefficient Estimate (t-statistic)		
		(1)	(2)	(3)
CEO Characteristics				
CEO Equity Holdings$_{i,t}$	?	-0.038	-0.039	-0.056
		(-1.08)	(-1.06)	(-1.35)
CEO Award$_{i,t}$	+	-0.004	-0.011	0.030
		(-0.10)	(-0.26)	(0.53)
CEO=Chairman$_{i,t}$	+	0.095	0.093	0.084
		(2.54)	(2.49)	(1.93)
CEO Tenure$_{i,t}$	+	-0.002	-0.003	-0.002
		(-0.79)	(-1.22)	(-0.65)
Antitakeover Provisions and Family Firm				
Classified Board$_{i,t}$	?	-0.099	-0.100	-0.054
		(-2.79)	(-2.84)	(-1.17)
Democracy Firm$_{i,t}$	?	0.027	0.024	0.015
		(0.40)	(0.36)	(0.18)
Dictatorship Firm$_{i,t}$	?	0.095	0.094	-0.032
		(1.23)	(1.22)	(-0.51)
Family Firm$_{i,t}$	+	-0.012	-0.013	0.060
		(-0.19)	(-0.21)	(0.68)
No. of observations		949	949	609
Adjusted R^2		0.14	0.14	0.13

Table 26
Audit Committee Affiliation and Earnings Management:
Probability of Narrowly Beating vs. Narrowly Missing Consensus Forecasts

This table presents estimates from the following pooled logistic regression:

$$D_{i,t} = \alpha + \beta\, AffiliationIndex_{i,t} + X\gamma + YearQtr\lambda + Ind\omega + \varepsilon_{i,t}\,.$$

$D_{i,t}$, the dependent variable, equals one if quarterly earnings-per-share for firm i in year/quarter t either exactly meets or narrowly beats the consensus forecast by one cent, and zero otherwise. This regression is estimated within the sample of firm-year/quarters for which quarterly earnings-per-share falls within four cents below or one cent above the consensus forecast. We compare two different affiliation indices: the *Conventional Index* (Column 1), and the *Conventional-and-Social Index* Column 2). We also examine the *Social Index* within the subsample of audit committees with no conventional ties to the CEO (Column 3). X is a set of control variables as defined in Table 23. *YearQtr* denotes the year-quarter dummies, $Year_{1996}Qtr_2$ through $Year_{2005}Qtr_4$, and *Ind* denotes the industry dummies Ind_2 through Ind_5, based on the Fama-French (1997) five-industry classification. All *p-values* account for clustering (by firm).

Variables	Coefficient Estimate [p-value]		
	(1)	(2)	(3)
Affiliation Index			
Conventional Index$_{i,t}$	1.086 [0.00]		
Conventional-and-Social Index$_{i,t}$		0.703 [0.00]	
Social Index$_{i,t}$			0.759 [0.00]
Firm Characteristics			
ln(TotalAssets$_{i,t}$)	-0.068 [0.46]	-0.089 [0.36]	-0.103 [0.35]
Long-Term Debt$_{i,t}$	0.128 [0.81]	-0.073 [0.88]	-0.271 [0.64]
ln(MB$_{i,t-1}$)	0.337 [0.01]	0.285 [0.02]	0.316 [0.03]
Neg.NI$_{i,t-1,t-2}$	-0.553 [0.39]	-0.559 [0.35]	-0.116 [0.86]
Analyst Coverage$_{i,t}$	0.005 [0.72]	0.010 [0.45]	0.017 [0.29]
Other Audit Committee Characteristics			
ln(Audit Committee Size$_{i,t}$)	-0.264 [0.17]	-0.230 [0.22]	-0.364 [0.11]
Old Directors on Audit Committee$_{i,t}$	0.471 [0.19]	0.397 [0.29]	-0.036 [0.94]
Busy Audit Committee$_{i,t}$	0.174 [0.32]	0.109 [0.54]	0.093 [0.67]
Audit Committee Members' Equity Holdings$_{i,t}$	-52.629 [0.00]	-48.201 [0.00]	-75.855 [0.07]
CEO from Other Company on Audit Committee$_{i,t}$	0.083 [0.62]	-0.024 [0.88]	-0.156 [0.43]

Table 26. Continued.

Variables	Coefficient Estimate [p-value]		
	(1)	(2)	(3)
CEO Characteristics			
CEO Equity Holdings$_{i,t}$	-0.247 [0.09]	-0.256 [0.06]	-0.185 [0.28]
CEO Award$_{i,t}$	0.202 [0.35]	0.180 [0.41]	-0.013 [0.97]
CEO=Chairman$_{i,t}$	0.021 [0.91]	0.018 [0.92]	0.026 [0.90]
CEO Tenure$_{i,t}$	0.004 [0.65]	-0.004 [0.66]	-0.013 [0.38]
Antitakeover Provisions and Family Firm			
Classified Board$_{i,t}$	-0.107 [0.57]	-0.075 [0.70]	-0.206 [0.39]
Democracy Firm$_{i,t}$	0.107 [0.62]	0.034 [0.88]	-0.008 [0.98]
Dictatorship Firm$_{i,t}$	0.387 [0.27]	0.402 [0.23]	0.079 [0.85]
Family Firm$_{i,t}$	-0.243 [0.38]	-0.275 [0.26]	-0.428 [0.21]
No. of observations	1560	1560	930
Likelihood ratio	122.56	138.46	99.74

Table 27
Audit Committee Affiliation and CEO Bonus

This table presents estimates from the following pooled OLS regression:

$$Bonus_{i,t} = \alpha + \beta\, AffiliationIndex_{i,t} + X\gamma + Year\lambda + Industry\delta + \varepsilon_{i,t}\,.$$

$Bonus_{i,t}$, the dependent variable, is the bonus in millions for the CEO of firm *i* in year *t*. We compare two different affiliation indices: the *Conventional Index* (Column 1), and the *Conventional-and-Social Index* Column 2). *X* is a set of the following control variables: *ln*(*Total Assets*)*, ln*(*MB*)*, ROA, Audit Committee Size, Old Directors on Audit Committee, Busy Audit Committee, Audit Committee Members' Equity Holdings, CEO from Other Company on Audit Committee, CEO Equity Holdings, CEO Award, CEO = Chairman, CEO Tenure, Classified Board, Democracy Firm, Dictatorship Firm,* and *Family Firm. ROA* is return on assets. All remaining control variables are as defined in Table 23. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$. *Industry* denotes the industry dummies using the Fama-French (1997) five-industry classification. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

Variables	Expected Sign	Coefficient Estimate (t-statistic)	
		(1)	(2)
Conventional $Index_{i,t}$	+	0.111 (0.26)	
Conventional-and-Social $Index_{i,t}$	+		0.415 (2.16)
No. of observations		884	884
Adjusted R^2		0.25	0.26

Table 28
Social Ties and Sarbanes Oxley

This table presents estimates from the following pooled OLS regression:

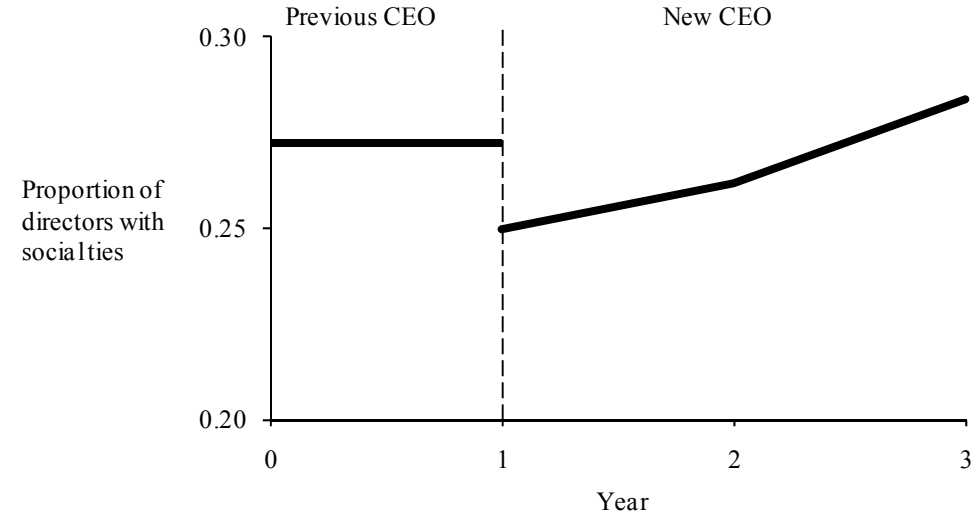
$$\left|AAC_{i,t}\right| = \alpha + \beta_1 AffiliationShift_{i,t} \times PostSOX_{i,t} + \beta_2 PostSOX_{i,t} + \beta_3 AffiliationShift_{i,t} + X\gamma + Year\lambda + \varepsilon_{i,t} .$$

$|AAC_{i,t}|$, the dependent variable, is the absolute value of abnormal accruals as defined in the text (Section 3.B) for firm *i* in year *t*. *AffiliationShift* is a dummy that equals one if a post-SOX (≥ 2002) decrease in the average number of conventional ties to the CEO is accompanied by an increase in the average number of social ties to the CEO, and zero otherwise. *PostSOX* is a dummy that equals one in years greater than or equal to 2002, and zero otherwise. *X* is the same set of control variables as in Table 25. *Year* denotes the year dummies, $Year_{1997}$ through $Year_{2005}$. All *t*-statistics are calculated using White standard errors adjusted for clustering (by firm).

Variables	Expected Sign	Coefficient Estimate (t-statistic)
$AffiliationShift_{i,t}$ * $PostSOX_{i,t}$	+	0.103 (1.98)
$PostSOX_{i,t}$	-	0.032 (1.05)
$AffiliationShift_{i,t}$	?	0.014 (0.36)
No. of observations		348
Adjusted R^2		0.25

Figure 1
Evolution of social dependence surrounding the appointment of a new CEO

Using an unbalanced panel of 81 CEO appointments, this figure demonstrates the evolution of the board's social dependence from the year preceding ($t = 0$) to the three years following ($t = 3$) the appointment of a new CEO. In Panel A, we plot the average fraction of socially dependent directors. This average fraction is calculated as the average of the number of directors on the board who are socially dependent to the incumbent CEO divided by the total number of directors on the board. In Panel B, we plot the percentage change in the average fraction of socially dependent directors relative to time $t = 0$.



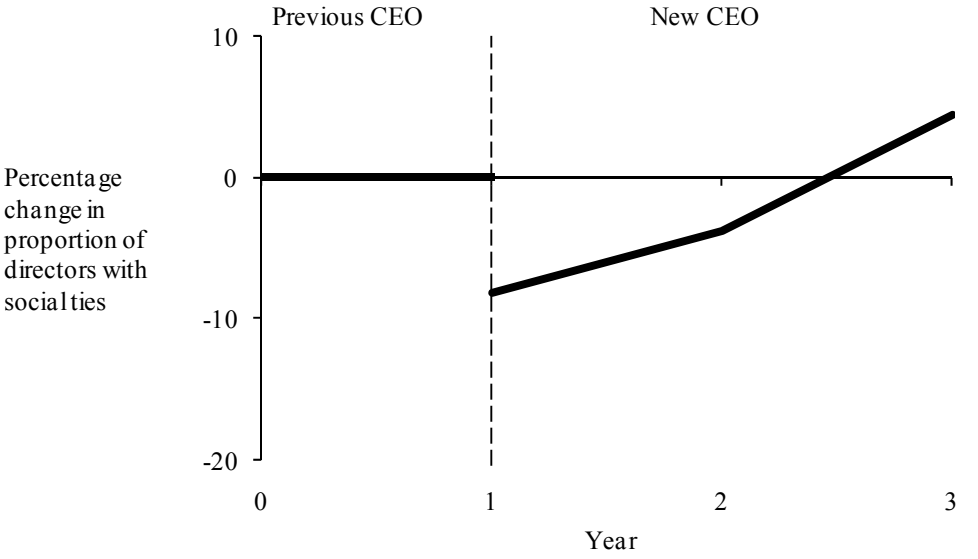
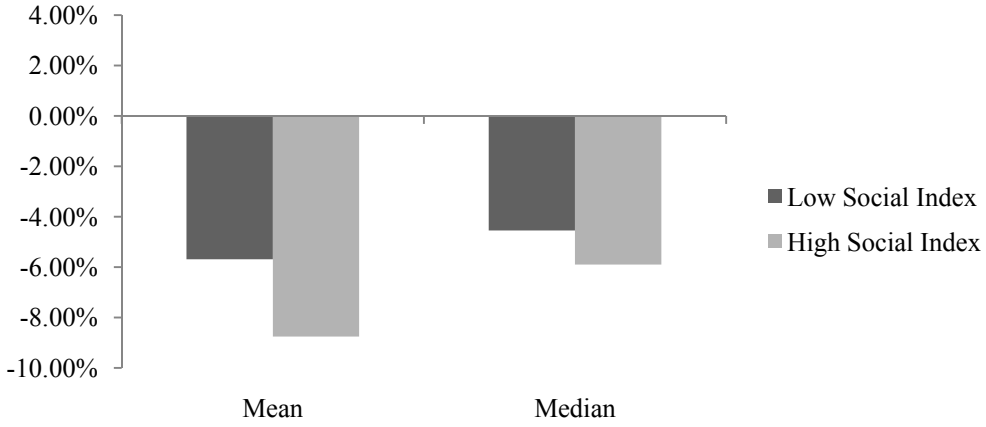


Figure 2
Situations involving upward versus downward managing attempts

This figure plots the average and median abnormal accruals (as defined in Section 3.B.1) within the subsample of firms where the *Conventional Index* equals zero. Panel A reports statistics for firm-years in which a new CEO arrives 3 to 9 months prior to fiscal year end and the predecessor does not remain active in the management of the firm (either as an employee or a board member) subsequent to his departure as CEO (N = 18). Panel B reports statistics for firm-years in which the CEO sells more than $1 million in shares through open market trades (N = 397). We report average and median abnormal accruals in each of two categories: *Low Social Index* and *High Social Index*, denoting firms that are below or above the median, respectively, in terms of their *Social Index*.

Panel A. New-CEO Arrivals



Panel B. CEO Trades