The Structure of Board Committees

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Abstract. We document and analyze board committee structures utilizing a novel dataset containing full board committee membership for over 6,000 firms. Board committees provide benefits (specialization, efficiency, and accountability benefits) and costs (information segregation). Consistent with these benefits and costs, we find that committee activity increases with firm size, the proportion of outside directors, board tenure and size, and public information available to outside directors. Moreover, boards allocate directors in ways to alleviate information segregation through multi-committee directors. Specifically, multi-committee directors tend to serve on related committees and be outside directors with more expertise and experience. Also, busy directors are less likely to serve on multiple committees, possibly to avoid being overloaded.

1. Introduction

Despite the central role of boards in in corporate governance,[1] there is relatively little understanding of the internal organization of boards, specifically the structure of board committees. Such committees are important because, as Kesner (1988) and Klein (1998) suggest, committee meetings, and not the board meetings, are where most board activity actually takes place. Adams et al. (2015) find that 52% of board activity in S&P 1500 firms takes place at the committee level after the implementation of Sarbanes-Oxley. Specific tasks that take place within board committees include both "monitoring" tasks (such as auditing and management compensation) and "advising" tasks (for example, Morgan Stanley has a technology committee that advises the board and management team on Big Data tools and systems that control stock trading).[2] Understanding how board committees are structured, therefore, allows us to gain deeper insights into the role of boards and their optimal design.

We propose a framework of benefits and costs of committees that boards balance when implementing committee structures. Board committees provide three benefits. First, committees—through the process of decentralization—can allow for knowledge specialization (De Kluyver, 2009), which benefits firms because the monitoring and advising tasks of boards are complex and require firm-specific knowledge (Kim et al., 2014). Second, specialization through committees can allow for a more efficient task allocation to directors, leading to task-division efficiency. Third, committees can increase the accountability of the board to the firm by reducing individual free-riding and enabling outside directors to perform their monitoring duties more effectively through greater separation from management. Despite these benefits, there is also a cost associated with board committees: board committees can lead to information segregation for the directors not on a specific committee (Reeb and Upadhyay, 2010). In light of these tradeoffs, we then explore the concept of multi-committee directors (MCDs), directors who sit on 2 or more committees on the same board, and we propose that boards can moderate committee benefits and costs through the MCDs. We test these mechanisms by confirming hypothesized relationships between committee activity and observed firm characteristics; specifically, we document whether firms with greater potential benefits (costs) from committees have more (less) committee activity.[3]

We utilize a novel dataset from Equilar to examine the nature of committee structure and the allocation of directors across committees. The dataset contains complete committee membership information, including the membership of non-required committees, for directors from firms listed on the

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[1] Recent work has documented general characteristics of boards, such as board size, busyness, and outside vs. inside directors. See Linck et al., 2008; Boone et al., 2007; Fich and Shivdasani, 2006; Coles et al., 2008; Armstrong et al., 2014.

[2] "Morgan Stanley Board Pushes Emerging Area of Tech Governance" by Kim Nash, 2015.

[3] We use two difference measures of committee activity: the number of committees and the total number of committee meetings.

Russell 3000 from 2001 to 2013. Full committee data has not been widely available (Jiraporn et al., 2009; Adams et al., 2010), especially with coverage of both *required* committees (audit, compensation, and nominating/corporate governance) and *non-required* committees (e.g., finance, technology, and strategy). Using this comprehensive panel dataset of over 6,000 unique firms, we first document the structure of board committees. Our descriptive analysis reveals that: (1) the use of certain commonly mentioned non-required committees—including finance, technology, strategy, ethics, and diversity—is relatively rare; (2) the number of board committees has been fairly stable over time; (3) the majority of directors sit on multiple committees.

Our regression analysis provides support for the theorized benefits (knowledge specialization, task-division efficiency, and accountability) and the cost (information segregation). Consistent with the view that committees enable knowledge specialization, we find that committee activity increases with firm size and the proportion of outside directors; larger firms and firms with more independent boards have higher benefits from specialization, because larger firms face more complex issues than smaller firms (Linck et al., 2008; Lehn et al., 2008), and outside directors face higher costs to accumulate knowledge about the firm (Kim et al., 2014).[4] Next, consistent with the view that committees provide task-division efficiency and accountability benefits, we find that board size and boards where the CEO is also the chairman (CEO Duality) are positively associated with committee activity.[5] Large boards incur higher costs during communication and coordination as well as higher costs from the free-riding problem (Reeb and Upadhyay, 2010), and boards where the CEO is also the chairman may have greater agency problems (Brickley et al., 1997). Furthermore, we find that the proposed benefits (knowledge specialization, task-division efficiency, and accountability) may heterogeneously affect the value of different types of committees in a specific examination of the executive and finance committees, the two most common non-required committees.

On the other hand, consistent with the view that committees can have information-segregation costs, we find that committee activity is lower when board tenure is shorter or when less public information is available to outside directors. Outside directors with shorter tenure have less firm-specific knowledge (Kim et al., 2014), resulting in greater information asymmetry between management and outside directors and greater information-segregation costs from using committees. Outside directors can likely overcome information segregation if there is more public information available.

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[4] Firm size is likely exogenous to the number of committees, but the proportion of outside directors may be endogenous as boards with more committees may look for more outside directors. We address this potential reverse causality issue in Section 5.1 through an exogenous shock to the number of committees to assess the extent with which boards add directors in order to staff committees.

[5] We address possible endogeneity between board size and the number of committees using the exogenous shock as well.

Boards can moderate these committee benefits and costs through the use of multi-committee directors (MCDs), directors who sit on 2 or more committees on the same board. MCDs can reduce information-segregation costs of committees when allocated properly: we find that committees related to each other, such as the audit and loan committee, are more likely to have overlaps by MCDs. Furthermore, directors with expertise and experience—as proxied by their financial expertise and tenure—are more likely to be assigned to multiple committees. However, MCDs can become overloaded if they not allocated efficiently. Prior work has shown that directors who serve on many other boards can be time-constrained (Fich and Shivdasani, 2006), and we extend that to show that the number of *other* board committees—committees on the other boards that a director serves— is negatively associated with being on multiple committees on the focal board, consistent with the view that boards assign MCDs in ways to avoid overloading directors.

Finally, we exploit the implementation of the Sarbanes-Oxley Act as a quasi-natural experiment to test the robustness of our prior findings. Our previous tests make the assumption that boards have a given size and then decide on what committees to have and how to allocate the directors to committees: our previous results might be biased if boards add directors in response to changes in committee structure. To address this issue, we look at the implementation of the Sarbanes-Oxley Act, which produced exogenous variation in the number of committees. Beginning in 2002, the major stock exchanges—at the behest of the SEC adoption of the 2002 Sarbanes-Oxley Act—mandated that firms create a governance committee.[6] We examine how boards staff this additional committee. The addition of the governance committee led to an increase of 0.27 directors in board size, while it led to an increase of 1.38 in the number of MCDs.[7] In other words, to staff an additional committee, boards are about 5 times more likely to assign directors to multiple committees than to add directors to the board. Thus, while we cannot rule out the possibility of reverse causality between board size and the number of committees, it is likely not of first-order importance.

The rest of the paper proceeds as follows: In Section 2, we provide background on board committees and discuss the theoretical tradeoff in structuring them. In Section 3, we describe our data and discuss our descriptive findings. In Section 4, we conduct our main multivariate tests. In Section 5, we conclude and suggest future research directions.

2. Background and Framework

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[6] The governance committee is also referred to as a nominating or corporate governance committee. Nominating and governance committees are often grouped together in prior literature because of their overlapping functions. The NYSE states that "listed companies must have a nominating/corporate governance committee composed entirely of independent directors" (Section 303A.04).

[7] This finding is robust several years after SOX. Note that the number of MCDs is less than or equal to the board size.

We first document the historical use of board committees and discuss prior related work. We then introduce our framework of benefits and costs for committees and the implications of multi-committee directors for that framework.

2.1 History and Background Information on Committees

Board committees have become a more regulated and formal component of the board of directors in the United States over time.[8] Beginning in 1940, the Securities and Exchange Commission (SEC) recommended that firms establish audit committees comprised of outside directors (Birkett, 1986). In the 1970s, SEC adopted rules requiring firms to disclose audit committee composition (Reeb and Upadhyay, 2010). In 2002, the Sarbanes-Oxley Act (SOX) was passed, and in response, the major stock exchanges NYSE and NASDAQ mandated that firms have compensation and governance committees.[9] In addition, SOX required that the audit, compensation, and governance committees be composed solely of outside directors.[10] These three committees are considered the *required* committees. The audit committee oversees the integrity and compliance of the firm's financial reporting. The compensation committee focuses on human resource policies and procedures, most notably the compensation of top executives. The governance committee recommends new candidates for the board and other top executive positions and sets general governance procedures; directors are usually assigned to committees at the recommendation of the governance committee (De Kluyver, 2009).

Beyond the required committees, many boards implement non-required committees to focus on other issues of relevance to the board. Strategy committees and finance committees may recommend growth opportunities (internal new projects or external M&A or alliances) and recapitalization schemes to finance projects respectively. In other cases, the board may implement diversity or corporate social responsibility committees to signal commitment to social issues and lead efforts in those directions. For example, Nike implemented a corporate responsibility committee to address controversy in its use of "sweatshop" labor and other health and environmental concerns (Paine et al., 2014). It is also relatively common to include an

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[8] Our study includes both standing and ad hoc committees. Standing committees are formally defined committees that are used on a continual basis. Ad hoc or advisory committees are formed on a temporary basis.

[9] NYSE requires an independent nominating committee. NASDAQ requires director nominees selected or recommended for board's selection by an independent nominating committee or by a majority of the independent directors.

[10] An inside director is a director who is current employee at the firm. An affiliated director is a director with existing or past business relationships with the firm (e.g., consulting, legal). We define an outside director as one who is neither an affiliated nor an inside director, which is equivalent to the general definition of an independent director. We use the terms independent and outside interchangeably. For our purposes, we group affiliated directors together with inside directors.

executive committee composed of the chair, the CEO, and a subset of officers and directors to act on behalf of the board when the full board cannot meet.[11]

While there are varied practices on how boards and committees interact, generally speaking, a committee is empowered to directly set firm policy, inform the board via informal knowledge sharing or formal reports, and propose actions to be executed by the full board (De Kluyver, 2009). Committees also work closely with management, directly influencing the firm. For example, in 2005, Nike's corporate responsibility committee worked with management to study the problem of overtime in factories. While the committee and management initially played a monitoring role, eventually they realized "the limits of what monitoring could accomplish" (Paine et al., 2014). Rather than monitoring the factories 24 hours a day, they instead advised management to innovate to make manufacturing processes safer and more sustainable. This anecdote reveals how committees both simultaneously monitor and advise through the firm-specific knowledge gained by working with management.

2.2 Prior Studies on Board Committees

Most studies in corporate governance focus on the board of directors as the main unit of study. The few studies on board committees have predominantly examined the effect of the characteristics of a single committee on performance. Klein (2002) examines how audit committee characteristics affect earnings management, and finds that audit committee independence is negatively related to abnormal accruals. Some studies look at committees in aggregate. Kesner (1988) examines committee composition, finding that the composition of directors that serve on committees differs from the composition of directors that do not serve on committees in occupation, type, tenure and gender. Reeb and Upadhyay (2010) examine how committees can resolve coordination problems of large boards. Other recent research uses committees as a proxy for a board's monitoring or advising ability; for example, Faleye et al. (2011) use committee assignments to proxy for "intensive monitoring," finding that boards with intensive monitoring have worse advising performance. Finally, concurrent emerging work signals a shift towards a holistic understanding of board committees. Adams et al. (2015) utilize textual analysis of proxy statements to study delegation of work to committees by corporate boards, and they conclude that "board committees are important for board functioning and can no longer be ignored."

Our work extends beyond earlier work by providing a broader framework for thinking about the trade-offs in committee structure and introduces the moderating use of the multi-committee director.

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[11] The need for an executive committee to meet in place of the full board of directors has decreased with more sophisticated telecommunication technology (De Kluyver, 2009)

2.3 Benefits of Committees

As stated earlier, board committees offer three main benefits: knowledge specialization, task-division efficiency, and accountability. The nature of the monitoring and advising tasks of boards are complex and require significant firm-specific knowledge, the accumulation of which requires personal investment from outside directors (Kim et al., 2014). The high costs of knowledge acquisition make it advantageous for directors to be specialized, and decentralization through committees allows directors to specialize in particular areas (Rosen, 1983; De Kluyver, 2009). Beyond the acquisition of specialized knowledge, committees allow boards to achieve more efficient decision-making by dividing tasks among board members and avoiding potential coordination and communication costs of a large board (Reeb and Upadhyay, 2010).

Committees can also increase the accountability of the board in two ways. First, committees increase accountability of individual directors by assigning them a specific task and responsibility (Harrison, 1987). This assignment of tasks can separate an individual director's contribution from the board's aggregated "team" output, where there may be an incentive to shirk when individual output cannot be distinguished from the team output (Alchian and Demsetz, 1972). Second, committees can make the board as a whole more accountable to the shareholders by separating the outside directors from management for certain decisions. CEOs often have significant bargaining power over outside directors, especially when the CEO has high ability, which can undermine a director's independence (Hermalin and Weisbach, 2003). However, board committees responsible for monitoring are almost always entirely composed of outside directors, allowing them to be insulated from the CEO's influence.

Altogether, we hypothesize that firms with greater needs for knowledge specialization, task-division efficiency, and accountability employ more committees. To provide evidence for the specialization benefit, we consider firm size and board independence. Prior studies suggest that boards of larger firms face more complex issues than smaller firms (Linck et al., 2008; Lehn et al., 2009). As discussed earlier, organizational complexity requires great knowledge specialization, and thus we expect a positive relationship between firm size and committee activity. Also, outside directors face higher personal costs than inside directors to accumulate knowledge about the firm. Boards with a greater number of outside directors may thus benefit more from specialization where directors can focus on accumulating knowledge about a certain aspect of the firm. Therefore, we expect a positive relationship between the proportion of outside directors and committee activity.

To provide evidence for the task-division efficiency and accountability benefits, we consider board size and CEO Duality. Large boards have a greater free-riding problem (Reeb and Upadhyay, 2010; Lipton and Lorsch, 1992). In addition, large boards have higher task-division benefits from delegating to committees (Jensen, 1993). Therefore, we expect a positive relationship between board size and committee

activity. CEOs who are also the chairman of the board have more power and influence over the board, which can lead to greater agency costs (Brickley et al., 1997). Thus, we expect that these boards have more committee activity in order to help directors maintain their independence.

Our prior measures assume that each committee is the same, but there may be heterogeneity in the benefits generated by different committees. For example, the executive committee may provide more of a task-division efficiency benefit than the finance committee because the executive committee's purpose is to meet when the board itself cannot (Hayes et al., 2004). On the other hand, the finance committee has more of a knowledge specialization benefit. Thus, looking at each committee individually can provide more evidence that committees may have knowledge specialization or task-division benefits than looking at just the number of committees. In particular, larger firms and more independent boards tend to benefit more from specialization, thus we hypothesize that larger firms and more independent boards are more likely to have a finance committee as opposed to an executive committee.

2.4 Costs of Committees

As specialization occurs within an organization, information becomes more segregated. Absent information sharing, directors on a board committee may not have access to the expertise and information of other directors and the CEO who do not serve on the committee. The recent trend towards increased delegation of responsibilities from the board-level to the committee-level may lead to greater barriers to communication in the board, limiting effective board decision-making (Adams et al., 2015). This information segregation may be especially costly for board committees in a more "advisory" role, since advising management requires firm-specific information from the CEO (Adams and Ferreira, 2007). Even with information sharing, information segregation due to committees can still be costly because communications between directors and from the CEO to directors may be imperfect (Brickley et al., 1997). Additional information-segregation costs can occur when directors are not aware of the activities of a committee they are not on (Reeb and Upadhyay, 2010). We hypothesize that boards with high (low) information-segregation costs will have less (more) committee activity.

To provide evidence on the information-segregation hypothesis, we consider board tenure and the availability of public information to outside directors. On boards with longer tenure, outsider directors have time to gain firm-specific knowledge (Kim et al., 2014). Information asymmetry between the management and outside directors is lower, reducing information segregation costs; thus we predict that board tenure is positively associated with committee activity. On the other hand, when there is less public information about the firm, as proxied by lower number of analyst forecasts an d higher analyst forecast standard deviations (Duchin et al., 2010), it is more costly for outside directors to acquire information about the firm,

leading to high information-segregation costs. Therefore, we predict that firms with less publicly available information have fewer committees.[12]

2.5 Multi-Committee Directors

To alleviate information-segregation costs, boards may assign directors to multiple committees, facilitating information sharing in two channels. By sitting on multiple committees, directors gain more *individual* information about the issues of the firm, allowing them to make better decisions at both the committee and the board level. Furthermore, the board can have more *collective* information as multi-committee directors lead to larger committee sizes, resulting in more directors being involved with each committee. In the extreme case, on some boards, every director serves on every committee, which Larcker et al. (2014) label the "committee of the whole."

To test whether multi-committee directors (MCDs) alleviate information-segregation costs, we identify scenarios in which there may be high information-segregation costs, absent any committee overlaps. First, when two committees have similar and overlapping duties, there are likely high information-segregation costs if there are no MCDs that sit on both committees. On the other hand, if MCDs sit on both of the committees, these information-segregation costs are greatly reduced. We predict that boards assign MCDs to committees that are similar to one another, which we term "related committees." One example of related committees are the audit and compensation committee: a major responsibility of the audit committee is to detect earnings management, the level of which depends on CEO incentives, which are set through CEO compensation by the compensation committee (Laux and Laux, 2009). Second, there may be influential/important outside directors on the board, such as directors with financial expertise or directors with high tenure. When these directors are not on a committee, there are high information-segregation costs, since this director's expertise/experience is not being utilized on that committee. Hence, we predict that boards avoid these information-segregation costs by assigning directors with expertise/experience to multiple committees.

While MCDs may alleviate information-segregation costs, there is also a greater risk of these directors being overloaded. In particular, busy directors who sit on many other boards or many other board committees have higher time constraints (Fich and Shivdasani, 2006; Field et al., 2013). Thus, we predict that boards are less likely to assign busy directors to be MCDs.

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[12] CEO Duality can also increase information-segregation costs because there could be larger information asymmetries between CEOs and outside directors when the CEO is also the chairman. Thus, for information reasons, CEO Duality might be negatively associated with committee activity.

3. Sample and Descriptive Analysis

The initial sample consists of all Russell 3000 firms as well as other peer firms and international firms, predominantly from Canada, Bermuda and China,[13] with available committee membership data. We exclude financial firms (SIC codes 60-69) from our sample, because they have very different board structures.[14] We join our sample with data from Compustat, the Center for Research in Security Prices (CRSP) and Thomson Reuters. Our final sample contains 44,184 firm-years[15] and 6,539 unique firms. For comparison, Reeb and Upadhyay (2010) study a sample of 3,335 firm-years.

The proprietary committee data was provided through the Wharton Customer Analytics Iniative (WCAI) who matched us Equilar, a private firm that specializes in providing data for comparative evaluation of executive compensation. Equilar obtains board and committee data through the proxy statements (DEF 14A) submitted by a firm each fiscal year. For example, on its 2014 Proxy Statement, Hewlett Packard provided a section called "Board Structure and Committee Composition." In this section, they list their board committees: Audit, Finance and Investment, HR and Compensation, Nominating and Governance, Technology. They also list who serves on each committees and each committee's number of meetings. Next, Hewlett Packard describes the function of each committee. For example, it states that its Finance and Investment committee "reviews or oversees significant treasury matters such as capital structure and allocation strategy, derivative policy, global liquidity, fixed income investments, borrowings, currency exposure, dividend policy, share issuances and repurchases, and capital spending; oversees our loans and loan guarantees of third-party debt and obligations; reviews our Financial Services' capitalization and operations, including residual and credit management, risk concentration, and return on invested capital; and reviews the activities of our Investor Relations department." Based on descriptions like the one here, the committees are then classified. We selected a random sample of firms and verified that the data on committees matched with the proxy statement disclosures.

3.1 Variables

3.1.1 Variables for Firm-level Tests

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[13] The Russell 3000 is a stock market index of the stocks of 3000 US companies, which represents 98% of the investable US equity market. In addition, our sample includes the peer firms of many of these Russell 3000 companies that may or may not be in the Russell 3000.

[14] We also run our tests including these financial firms, and we get similar results.

[15] Since firms have different fiscal year month dates, we adjust the data so that the years line up in the most practical way. A firm with a fiscal year ending within the first five months would count as a prior year observation. For example, a firm with a fiscal year ending on 4/30/2002 would be counted as a 2001 observation. This process matches how Compustat records yearly observations.

The main dependent variables of interest are the number of committees and the total number of committee meetings. The number of committees is the count of committees listed on the firm's proxy statement. The total number of committee meetings is computed by taking the sum of meetings for each board committee and dividing by the number of board meetings during a fiscal year.[16] For a given firm, if the number of meetings is left blank for a certain committee, while the number of meetings is available for other committees, the number of meetings for that committee is not included in the total and effectively set as 0. If the firm is missing the meetings for all of its committees, the firm is omitted from regressions involving the number of committee meetings. These variables capture two different ways that boards could decentralize through committees: for example, a board could have few committees, but could still have heavy committee activity by having more committee meetings relative to board meetings.

The main independent variables of interest are: firm size, proportion of outside directors, board size, board tenure, availability of public information, and CEO Duality. Firm size is measured by the natural log of the firm's market value of equity (Linck et al., 2008). The proportion of outside directors is the number of outside directors divided by board size; we define outside directors as those who are neither affiliated nor inside, which is equivalent to the general definition for independent directors, and we use the terms independent and outside interchangeably. Board size is the count of all people who sit on the board. Board tenure is the average number of years that each outside director has been on the board. We proxy for the availability of public information by the number and standard deviation of analyst forecasts averaged over the year (Duchin et al., 2010). CEO Duality is 1 if the CEO also is the chairman and 0 otherwise.

We include a number of control variables built from data from Compustat, CRSP and Thomson Reuters: firm age, free cash flow, market-to-book ratio, R&D investment, capital investment, debt ratio, EBIT, EBIT lagged 1 year, block ownership. Firm age is the number of years that the firm has been listed on CRSP. Free cash flow is equal to operating cash flow less capital expenditures divided by total assets; we include free cash flow as a control because Linck et al. (2008) suggest that firms with higher free cash flow are likely to have a higher proportion of outside directors. Market-to-book ratio is the sum of the book value of assets and the market value of equity less deferred taxes and less the book value of equity, scaled by the book value of assets (Hennessy et al., 2007). R&D investment is R&D expenditures divided by total assets.[17] Capital investment is capital expenditures divided by total assets. R&D investment, capital investment, and market-to-book ratio capture a firm's growth opportunities (Linck et al., 2008). Debt ratio is long-term debt divided by total assets. EBIT is earnings before interest and taxes divided by total assets, which together with lagged EBIT allow us to control for short-term profitability. Block ownership

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[16] We divide by the number of board meetings because the number of committee meetings is mechanically affected by the number of board meetings. That is, when a board meets more, the committees also meet more.
[17] If a firm is missing R&D information, we replace it with 0 (Linck et al., 2008).

represents the proportion of the firm owned by 5% blockholders. Prior studies find that ownership plays a large role in determining board structure (Raheja, 2005). We also control for the busyness of the board following Fich and Shivdasani (2006) and Field et al. (2013), where the variable busy board is equal to 1 when the board is "busy" and 0 otherwise; a board is considered "busy" if a majority of the outside directors sit on 3 or more boards.

3.1.2 Variables for Director-level Tests

The main dependent variables are (1) *On Multiple Comm*, an indicator variable that is 1 if the director sits on 2 or more committees and 0 otherwise and (2) *On 3 or More Comm*, an indicator variables that is 1 if the director sits on 3 or more committees and 0 otherwise. The main independent variables of interest are: financial expertise, tenure, board busyness and committee busyness. Financial expertise is 1 if the director is a financial expert as defined by the SEC, based upon a director's knowledge of and experience with reviewing financial statements. Tenure is the number of years that the director has served on the board. We use two different measures of director busyness. The first measure is board busyness, the number of other boards that a director sits on (Ferris et al., 2003). The second measure is committee busyness, the number of other board committees that a director sits on; for example, if a director sits on boards A, B and C, the director's committee busyness on board A is the sum of the number of committees that the director serves on in boards B and C.

3.2 Descriptive Analysis

Panel A in Table 1 displays firm characteristics of our sample. The mean (median) of total assets is 4.84 billion (538 million). The mean (median) of market cap is 4.78 billion (591 million).[18] Panel B in Table 1 displays board characteristics of our sample. The mean (median) board size is 8.80 (8). 11% of boards in our sample are busy which is smaller than the percentage reported in most other board studies (e.g., Faleye et al., 2011).[19] The mean (median) number of committees is 3.57 (3), which is similar to the mean of 3.68 reported in Reeb and Upadhyay (2010). The mean (median) percentage of directors on multiple committees for each firm-year is 50.2% (50%), indicating that the majority of directors serve on multiple committees. We discuss Table 1 Panel C in our director-level tests.

Our examination of the data reveals several important features of board committee structures. First, we find that the use of certain commonly mentioned non-required committees—including finance,

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[18] The total assets and market value appear to be driven by large-firm outliers. In our regressions we correct for this by using the log of total assets.

[19] One possible reason is that we only include boards in our sample in computing busyness. Directors may sit on other boards that are not in our sample, which our measure does not capture.

technology, strategy, ethics, and diversity—is actually rare. As seen in Figure 1, there are three required committees and nineteen different non-required committees. The most common non-required committee is the executive committee, which 21.2% of boards have. However, beyond the executive committee, it is not common for boards to form additional non-required committees. Only 12.1% have finance committees, 7.5% have strategy committees and 3.3% have technology committees. Committees that deal with ethics and diversity are almost non-existent. It is somewhat surprising that there are not more non-required committees since most firms deal with issues like technology. In the cases where there is no technology committee, for instance, technology issues would be discussed at the board level or not at all by the board and left to the discretion of the top management team. This descriptive finding might be explained by the presence of information-segregation costs when committees address advising issues which require firm-specific information (Reeb and Upadhyay, 2010; Faleye et al., 2011; Faleye et al., 2013).

Second, the number of board committees has been fairly stable over time. Figure 2 displays the time trend of the number of committees, the number of required committees, and the number of non-required committees. Surprisingly, despite the growing scrutiny of boards from accounting scandals (e.g., Enron) and the financial crisis, the number of committees has remained constant over time, with the only increase occurring from 2001 to 2003. This change was due to SOX, which in conjunction with new exchange rules, mandated a governance committee, resulting in the visible rise of required committees from 2001 to 2003.

Third, on the average board, about 50% of directors sit on multiple committees. Figure 3 tracks the number of committees that directors sit on over time. The percentage of multi-committee directors is consistently over 50%, suggesting that the average director is heavily involved in committee work. The passing of SOX in 2002 increased the percentage of multi-committee directors. This observation can be attributed to the fact that SOX mandated that firms have fully independent audit, compensation and governance committees. To comply with these requirements, boards primarily assigned their independent directors to multiple committees. Decomposing the multi-committee directors by their committee load, we find that the percentage of directors who serve on 2 committees did not increase during the SOX period. Rather, the increase in the percentage of multi-committee directors is primarily being driven by the increase in directors who sit on 3 or more committees. The percentage of directors who sit on 1 committee and no committees (not shown) has continued to decrease past SOX, meaning that directors are being assigned to more committees over time. This observation suggests that the "specialized" directors who sit on 1 committee are being replaced by "coordinating" directors who sit on multiple committees.

4. Results

This section conducts both firm- and director-level econometric analyses to understand the benefits and costs of committees and how boards balance them in structuring and assigning directors to committees.

4.1 Benefits and Costs of Committees

To explain the benefits/costs of committees, we implement a regression analysis of our panel data. Specifically, we use an ordinary least squares (OLS) model with both industry and year fixed effects to control for time invariant industry effects and time trends respectively.[20] We use robust standard errors clustered at the firm-level. In all our regressions, we control for the following firm characteristics: firm age, free cash flow, EBIT, EBIT lagged 1 year, R&D investment, capital investment, market-to-book ratio, debt ratio and block ownership. We also control for the board's busyness. Our econometric model has the following general form:

$$Committee\ Activity_{it} = \beta \overline{Determinant}_{it} + \theta \bar{X}_{it} + \alpha_j + \delta_t + \varepsilon_{it} \quad (1)$$

For firm i in industry j at time t, $Committee\ Activity_{it}$ is the number of board committees and the total number of committee meetings, $\overline{Determinant}_{it}$ is the vector of independent variables of interest, $\bar{X}_{it}$ is the vector of firm level controls, α_j is an industry fixed effect, and δ_t is a year fixed effect.

In Table 2, we show our regressions on the number of committees and the number of total committee meetings on firm and board characteristics. We find that firm size as measured by natural log of the firm's market value of equity has a positive relationship with the number of committees and the total number of committee meetings. A 1% increase in market value is associated with an average increase of 0.07 committees in Column (1), representing a moderately large economic effect. We also find that the proportion of outside directors has a positive relationship with the number of committees and the total number of committee meetings. These findings are consistent with the view that committees allow directors to acquire specialized knowledge, which we hypothesized was especially important for larger firms and more independent boards. An increase in board size of 1 director is associated with an average increase of 0.12 more committees in Column (1), which is consistent with the idea that committees provide efficiency benefits and can help with free-riding problems. We next examine how committees may decrease agency costs of the board. Specifically, we find that CEO Duality is positively associated with the total number of

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[20] Most of the related literature on boards uses industry fixed effects. We also test our model with firm fixed effects and year fixed effects. While all the signs on predicted coefficients hold, we do not have enough variation within firms over time in some of the independent variables like busyness to get statistical significance.

committee meetings in Column (4), consistent with the view that committees can insulate outside directors from management, increasing the accountability of the board. Our regression of the number of committees on determinants in Column (1) has an Adjusted R^2 of 0.30, suggesting that our model explains much of the variance in committee structure.

On the cost side, we observe a positive association between board tenure and the number of committees, suggesting that boards with lower information-segregation costs have more committees. The positive association disappears when considering the relationship between the total number of committee meetings and board tenure; if more experienced boards have established routines for their committees, this might lead to fewer meetings for each committee. We next examine how the number of committees varies with the information environment of the firm, as proxied by the number of analyst forecasts and the standard deviation of analyst forecasts. We find that the number of analyst forecasts is positively associated with the total number of meetings, while the standard deviation of analyst forecasts is negatively associated with the total number of meetings, consistent with the view that firms with higher information-segregation costs have less committee decentralization. The analysis in Table 2 uses a rough dependent variables, number of committees and committee meetings, which treat each committee the same, but in reality, there may be heterogeneity in the returns from specific committees.

In Table 3, we explore the theorized knowledge specialization benefit from the implementation of the executive and finance committees. The finance committee is positively association with firm size and the proportion of outside directors, while the executive committee has no significant association with firm size nor board independence. This result suggests that the finance committee provides a larger specialization benefit than the executive committee. Altogether, the results from this subsection suggest that boards balance the various benefits and costs when making choices for their committee structure.

4.2 Multi-Committee Directors (MCDs)

In this subsection, we analyze how boards can assign directors to multiple committees, leading to greater information sharing, while still allowing directors to maintain specialization benefits.

4.2.1 Related Committees

We hypothesize that MCDs are likely to sit on committees related to each other to increase the gains from information sharing. To test this idea, in Table 4 we examine the 72,028 directors that sit on two committees in the same firm where one of those committees is the audit committee.[21] We investigate the

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[21] We focus on the audit committee because almost every board has an audit committee, and we can clearly classify the role of the audit committee. It is important to note that our results are very similar when using the compensation or governance committee as our "base committee" and when we consider directors who sit on 2 or more committees.

other committee these MCDs sit on. In Column (1), we show counts of the committees that these particular MCDs also sit on in addition to the audit committee. Compensation, Governance, Finance and Nominating committees (in order from largest to smallest) occur the most frequently. However, boards commonly have these committees, so we adjust for the number of times that type of committee appears within our sample of firms that also have an audit committee. For example, there are 43,896 compensation committees in this sample of MCDs, while there are 1,390 technology committees. These numbers are displayed in Column (2). Dividing Column (1) by these values in Column (2) yields Column (3). This ratio reflects the rate at which MCDs on the audit committee get assigned to other committees.

The ratios in Column (3) are largest for the Conflict of Interest, Finance, Governance, Loan, and Compensation in order from largest to smallest. MCDs on the audit committee are most likely to also sit on the conflict of interest committee. Conflict of interest committees "survey, monitor and provide counsel on an ongoing basis as to the business relationships, affiliations and financial transactions of directors, officers and key employees, as they may relate to possible conflicts of interest or violations of the Company's Legal and Ethical Conduct Policy," (Hayes et al., 2004) suggesting a similar role to the audit committee. The compensation, nominating and governance are related to the audit committee in that they have a monitoring role (Klein, 1998). The finance and loan committees are related to the audit committee because of the activities of both committees have important impacts on the firm's financial statements.

4.2.2 Expertise and Experience

We document the characteristics of directors who are assigned to multiple committees. Our hypothesis is that directors with more expertise and experience are more likely to be assigned to multiple committees. To proxy for the expertise of the director, we use whether the director is a financial expert as defined by the SEC. To proxy for experience, we use the director's tenure on the board. Sample descriptives are displayed in Table 1 Panel C. 23% of our sample of directors are financial directors. On average, each director serves on 0.57 other boards and 1.25 other board committees. 65% of the directors are MCDs while 23% sit on 3 or more committees.

In our director-level regressions, we use director-fixed effects to control for time-invariant director characteristics as well as year fixed-effects. In addition, we only consider outside directors because inside directors do not typically serve on board committees. For each regression, we only use firms that have 3 or more committees.[22] We control for firm characteristics (firm size, firm age, number of analyst forecasts, standard deviation of analyst forecasts, free cash flow, EBIT, EBIT lagged 1 year, R&D investment, capital investment, market-to-book ratio, debt ratio and block ownership), board characteristics (board size,

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[22] This is because one of our dependent variables is whether the director serves on 3 or more committees, which is impossible if the board does not have 3 or more committees.

proportion of outside directors, board tenure, busy board, and number of committees) and director characteristics through director fixed effects.

Our results are displayed in Table 5. We find that directors who are financial experts are more likely to sit on multiple committees and 3 or more committees. We also find that the director's tenure is positively associated with serving on multiple committees and 3 or more committees. These findings suggest that boards assign experienced and knowledgeable directors to multiple committees, reducing the information-segregation costs associated with having many committees.

4.2.3 Director Busyness

Finally, we examine whether busy directors are less likely to serve on multiple committees in Table 6. We find that board busyness is not associated with being a MCD. While busy directors have time constraints, they also have certain qualities that make them desirable as committee members (Field et al., 2013). On the other hand, we find that committee busyness is negatively associated with being on multiple committees and being on 3 or more committees. This suggests that there are some potential overloading costs from serving on 3 or more committees, particularly for committee busy directors.

5. Additional Tests

5.1 Reverse Causality: Do committees cause increases in board size?

In our prior analyses, we implicitly assumed that boards have a given size and then choose what committees to have and how to allocate the directors to committees. In this section, we assess to what extent this assumption may be justified. That is, we address the endogeneity concern that boards may add directors in response to changes in committee structure. We exploit a set of regulatory changes that exogenously required some firms to add an additional committee. In February 2002, the chair of the SEC, Harvey Pitt, recommended that stock exchanges improve their governance listing policies in conjunction with a variety of other changes in the financial markets as imposed by the Sarbanes-Oxley Act (SOX). SOX was passed in July 2002, and the NYSE and NASDAQ stock exchanges proposed changes in August 2002 and October 2002 respectively (Chhaochharia and Grinstein, 2009). We refer to these events in the following section as SOX, although these changes are not officially part of SOX legislation, but rather coordinated regulations imposed by the exchanges. Most public firms made the relevant adjustments to comply before the final 2004 deadline[23] if they were not already in compliance.[24] Two key requirements imposed were:

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[23] The deadline to do so was during the first annual meeting after January 15, 2004, but no later than October 21, 2004 (Chhaochharia and Grinstein, 2009).

[24] Some public firms were excluded from compliance (e.g., controlled companies, limited companies, and companies in bankruptcy), and we exclude them from our analysis.

1) Firms must have a majority of independent directors.

2) Boards must have an audit, compensation, and governance committee.

Our difference-in-differences analysis exploits the exogenous addition of a governance committee. Our control group are firms that already had a governance committee prior to SOX and thus made no change to that committee. Our treatment group consists of firms that did not have a nominating committee before SOX and were forced to add a governance committee. Boards that had a governance committee and boards that did not are not likely to be that different, such as in the proportion of independent directors (Vafeas, 1999).

Our sample for the difference-in-differences analysis is constructed as follows. We first take firms that appear in our dataset in 2001 and also appear during at least one post-period (2003, 2004, 2005). We do not include firms in the year 2002 because SOX was enacted midway through 2002, making it difficult to identify the effect in that year. We isolate the sample to include only firms that are required to comply with the above requirements: those that are in the NYSE and NASDAQ and not in an exception category. We also require that the firm already had a majority of independent directors to exclude the effect of that requirement.

Since the goal of this analysis is to understand how boards adapt their board structure to fill an exogenous increase in the number of committees, the dependent variables of interest are board size and the number of MCDs on the board. In order to staff a new committee, boards can either add new directors or have more MCDs. Thus, the objective of this test is to compare whether and if so, how much board size and the number of MCDs increase after adding the governance committee. Notice that the number of MCDs is less than equal to the board size, so that this comparison is reasonable. Also notice that an increase in MCD has no change on board size.

We include both firm and year fixed effects in a generalized difference-in-differences model, and estimate robust standard errors clustered at the firm level (e.g., Becker and Stromberg, 2012). The results of the difference-in-differences regression are reported in Table 7. In Column (1) we find that board size increased by 0.27 from the addition of a governance committee, suggesting that boards, to some extent, do add directors to staff committees. In Column (2) we find that the number of MCDs on the board increased by 1.38. Thus, boards are 5 times more likely to increase the number of MCDs as opposed to increasing the board size in response to a change in committee structure. This finding holds in 2004 (Columns 3 and 4) and 2005 (Columns 5 and 6), indicating that boards are not gradually adding more directors over time. Thus, while we cannot rule out the possibility of reverse causality between board size and the number of committees, it is likely not of first-order importance.

5.2 Do committees partially substitute for board activities?

Our theoretical construct suggests that committees allow for decentralization of decision-making, which could reduce work at the board level. We further test this hypothesis by examining whether committees serve as a partial substitute for board activities. That is, holding everything constant, does having more committees decrease the amount of work that boards do? We use the number of board meetings to proxy for the amount of work by the board.

In Table 8 Column (1), we find a negative association between having the executive committee and the number of board meetings, suggesting that the executive committee can substitute for board activities. Interestingly, in Column (2), we find that this negative association disappears when considering the number of committees as the independent variable. This is potentially because the task-division benefit of certain committees is not high. As we showed in Table 3, the benefits of specialization, efficiency and accountability are not uniform across the different types of committees. In particular, the finance committee provides a larger specialization benefit than the executive committee. Because the executive committee is the most popular non-required committee, perhaps the task-division benefit of the executive committee may be larger than the other committees. The findings here reinforce the idea that the benefits of committees are not uniform across the different types of committees. In this case, it seems that the executive committee provides a larger task-division benefit than other committees.

6. Conclusion

This paper has conducted an empirical study of the structure of board committees. Our contributions are three folds. First, our descriptive analysis of a novel dataset documents a number of interesting features about the use and composition of board committees. In particular, we find that committee activity, specifically the number of committees, has been stable over time; most of the familiar non-required board committees are actually rarely used; and the majority of directors sit on multiple committees.

Second, our regression analysis sheds light on the determinants of board committee structure. We find that factors increasing the benefits of decentralizing board decisions to committees, such as a larger firm size, proportion of outside directors, and board size, and factors decreasing the costs, such as higher board tenure, are associated with a higher number of committees. Moreover, we provide evidence that this increase in committee activity is not uniform across the different types of committees, suggesting that the benefits and costs of a committee depend on its type.

Third, we introduce the concept of MCDs as directors who can promote information sharing, and we explore descriptively how boards may assign directors to multiple committees to alleviate their costs while maintaining their benefits.

Our paper opens many potential future avenues for research. In particular, more empirical and theoretical work is needed to understand information sharing in the context of the board of directors. In addition, it would be desirable to understand why specific committees, such as the strategy and technology committee, are rarely used and how they may impact performance. Moreover, it would be interesting to further examine how the use of board committees can lead to independent decision-making, lowering agency costs. Overall, committees need to be integrated more into our understanding of corporate governance.

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Figure 1: Distribution of Committees. Bars represent the percentage of firms that have the specified committee in the period 2001 to 2013. In particular, the percentage is computed by dividing the number of firm-year observations with the specified committee by the number of total firm-year observations. The committee is classified based on its description in the proxy statement. The Audit, Compensation, Nominating/Governance committees are required for the most part by the NYSE and NASDAQ (depicted in a darker shade) while the rest are not.
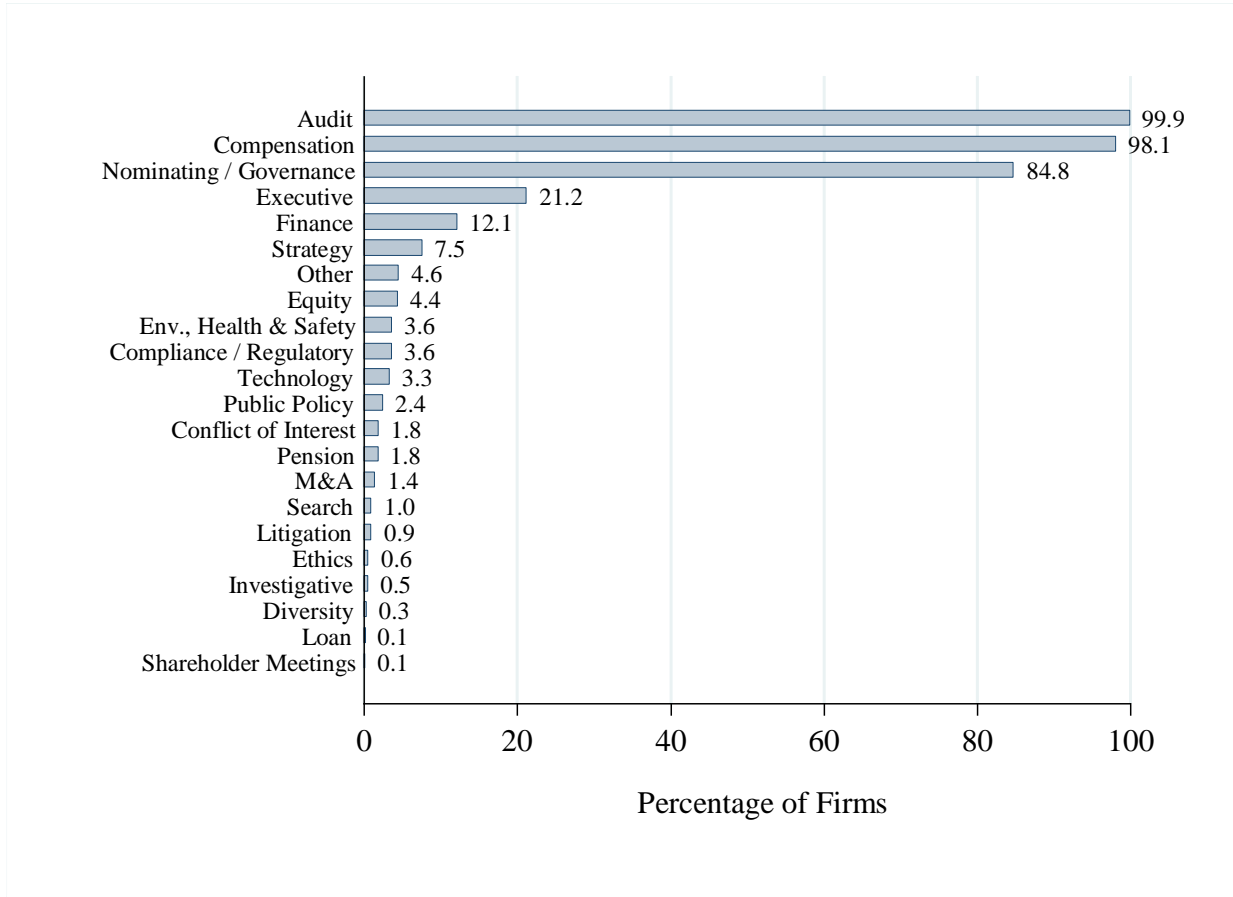
Figure 2: Number of Committees over Time: 2001–2013. The required committees are the audit, compensation, and governance committees. The non-required committees include the compliance/regulatory, conflict of interest, diversity, equity, ethics, executive, environmental, finance, investigative, litigation, loan, M&A, other, pension, public policy, search, shareholder meetings, strategy and technology committees. Altogether, there are 19 different types of non-required committees. SOX refers to the period where the Sarbanes-Oxley Act and major stock exchanges mandated changes to board structure.
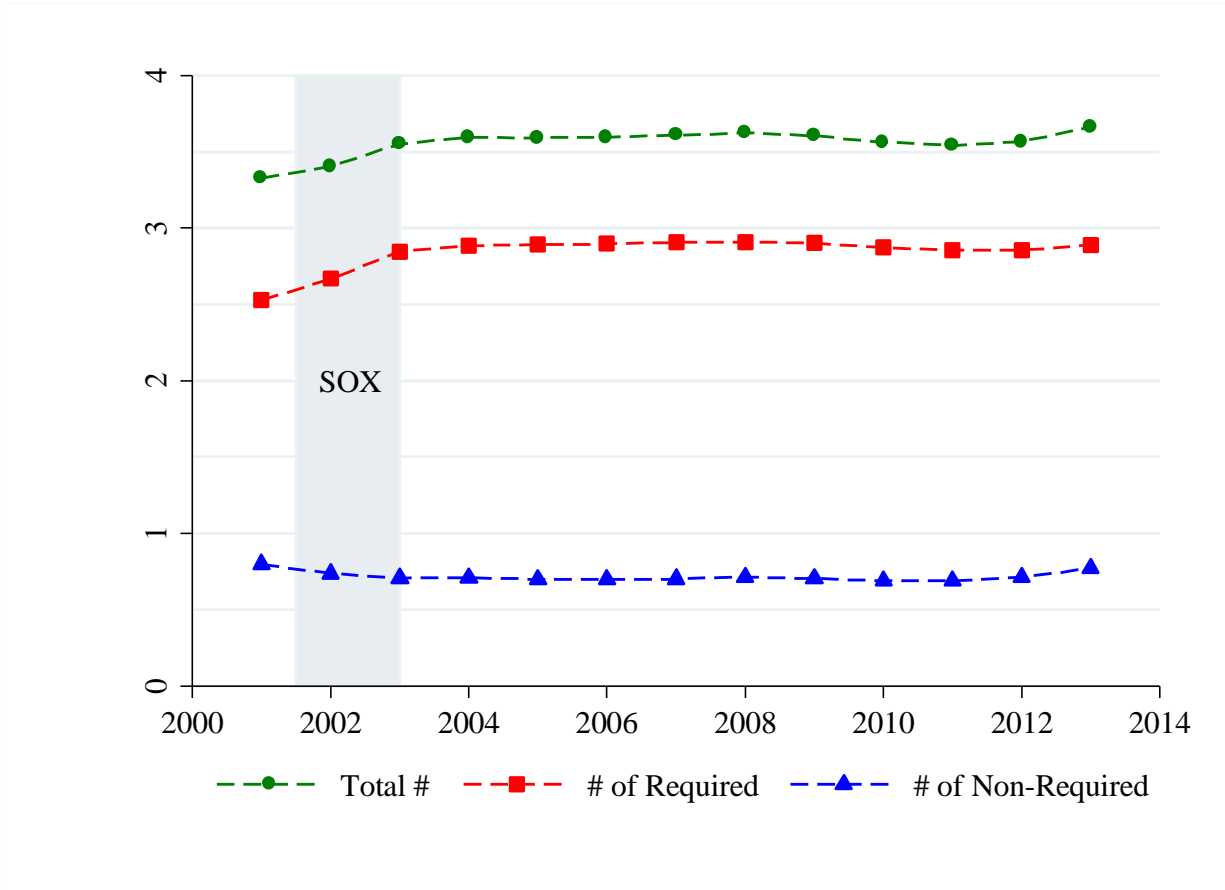
Figure 3: Allocation of Directors to Committees over Time: 2001–2013. The graph tracks the percentage of directors on multiple committees, 1 committee, 2 committees and 3 or more committees over time. The percentage is computed by taking the number of directors on the respective number of committees and dividing by board size during a fiscal year. These percentages are then averaged across all firm-years during a given year. SOX refers to the period where the Sarbanes-Oxley Act and major stock exchanges mandated changes to board structure.
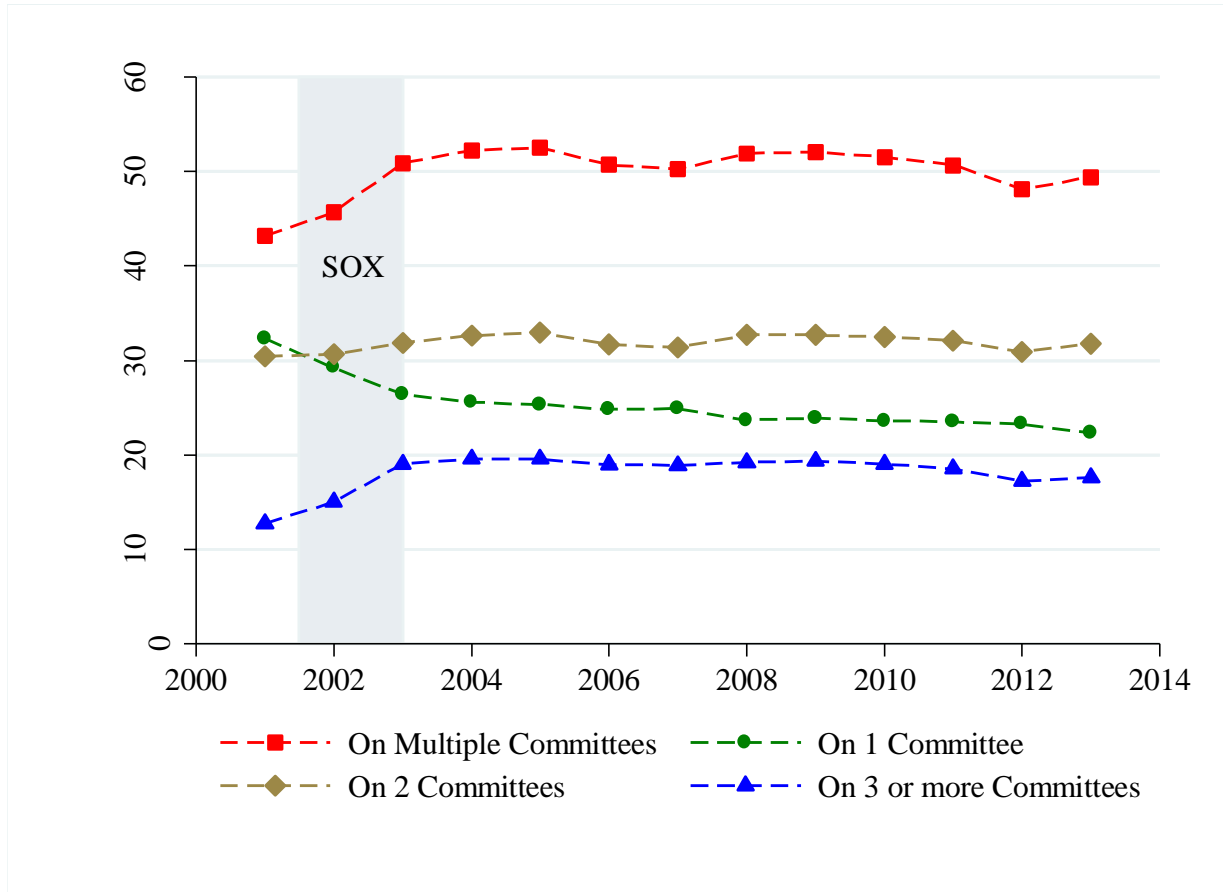
Table 1: Descriptive Statistics. This table reports summary statistics on firm, board, and director variables. The sample covers 44,184 firm-years from 2001 to 2013. We obtain firm data from Compustat, CRSP, Thomson Reuters and IBES. We omit financial firms from our sample (SIC codes 60-69). We obtain board and director data from an undisclosed firm. Director data includes only outside directors and are director-year observations. If directors serve on multiple boards, they are counted as distinct observations. *Total Assets* is the book value of total assets. *MVE* is the market value of equity. *Debt* is total long term debt divided by total assets. *FCF* is free cash flow divided by total assets. *RD* is r&d spending divided by total assets. *Capital* is capital expenditure divided by total assets. *MTB* is the market-to-book ratio. *EBIT* is the earnings-before-interest-taxes divided by total assets. *Block %* is the percent of firm shares owned by 5% blockholders. *# Analysts* is the mean number of analyst forecasts of EPS over a fiscal year. *Analyst St. Dev* is the mean standard deviation of analyst forecast sof EPS over a fiscal year. *Board Size* is the number of directors on the board. *Prop Ind* is the proportion of the directors who are outsiders. *Busy* is equal to 1 when the majority of the outside directors on a board sit on 3 or more boards and 0 otherwise. *Board Tenure* is the average number of years that each director has been on the board. *CEO Duality* is 1 if the CEO also is the chairman. *# Comm* is the number of committees. *# of Non-Required Committees* is the number of non-required committees, as defined above. *% on Multiple Comm* is the percentage of directors who serve on 2 or more committees. *# of Board Meetings* is the number of times the board meets during a fiscal year. *Comm Meetings* is the sum of the number of all committee meetings divided by the number of board meetings. If a firm does not report the number of meetings for a committee, it is assumed to be 0. *Financial Expert* is 1 if the director is a financial expert as defined by SEC regualtions. *Tenure* is the number of years that the director has served on the board. *Board Busyness* is the number of other boards that a director serves on. *Committee Busyness* is the the total number of other board committees that the director serves on. *On Multiple Comm* is 1 if the director sits on 2 or more committees. *On 3 or More Comm* is 1 if the director sits on 3 or more committees.

Variables	N	Mean	Median	St. Dev.
Panel A: Firm Characteristics				
Total Assets	34130	4835.87	538.02	22283.98
MVE	34191	4779.19	590.94	19373.47
Debt	33976	0.17	0.12	0.19
FCF	34056	0.00	0.03	0.17
RD	34129	0.06	0.00	0.11
Capital	34056	0.05	0.03	0.05
MTB	32348	2.07	1.52	1.81
EBIT	34119	0.03	0.07	0.20
Block %	36450	18.05	15.74	15.27
Firm Age	34202	18.56	13.00	17.46
# Analysts	33101	7.62	5.58	6.48
Analyst St. Dev	29953	0.14	0.05	0.32

Panel B: Board Characteristics

Board Size	44184	8.80	8.00	2.69
Busy Board	44184	0.11	0.00	0.32
Prop Ind	44184	0.69	0.71	0.18
Board Tenure	44161	6.79	6.18	4.20
CEO Duality	30578	0.25	0.00	0.43
# Comm	44184	3.57	3.00	1.08
# of Non-Required Comm	44184	0.71	0.00	0.93
% on Multiple Comm	44184	50.21	50.00	22.29
% on 3 Comm	44184	15.13	10.00	18.81
% on 4 Comm	44184	2.67	0.00	8.56
% on 5 Comm	44184	0.41	0.00	3.20
# of Board Meetings	40344	7.91	7.00	4.13
Comm Meetings	40344	1.92	1.77	1.10

Panel C: Director Characteristics

Financial Expert	248638	0.23	0.00	0.42
Tenure	244939	6.50	5.00	6.37
Board Busyness	272466	0.57	0.00	0.96
Committee Busyness	272466	1.25	0.00	2.18
On Multiple Comm	272466	0.65	1.00	0.48
On 3 or More Comm	272466	0.23	0.00	0.42

Table 2: Determinants of Committees. This table reports the regression of the number of committees and the number of committee meetings on board and firm characteristics. For all regressions, we use OLS estimation and include industry and year fixed effects. *# Comm* is the number of committees. *Comm Meetings* is the number of all committee meetings scaled by the number of board meetings. Other variables are defined in Table 1.

	# Comm			Comm Meetings		
	(1)	(2)		(3)	(4)	
	Coefficient	Coefficient	Prediction	Coefficient	Coefficient	Prediction
Ln(MVE)	0.0737***	0.0789***	(+)	0.0914***	0.0937***	(+)
	(4.85)	(4.33)		(6.91)	(6.06)	
Prop Ind	0.502***	0.457***	(+)	0.383***	0.309***	(+)
	(5.18)	(3.99)		(4.96)	(3.43)	
Board Size	0.115***	0.110***	(+)	0.0707***	0.0707***	(+)
	(16.54)	(13.81)		(11.93)	(10.06)	
Board Tenure	0.0227***	0.0211***	(+)	-0.00101	0.00201	(+)
	(5.68)	(4.43)		(-0.29)	(0.47)	
# Analysts	0.000491	0.000800	(+)	0.00996***	0.0102***	(+)
	(0.15)	(0.20)		(3.70)	(3.20)	
Analyst St. Dev	0.0457	-0.00231	(-)	-0.105**	-0.143***	(-)
	(0.74)	(-0.05)		(-2.55)	(-3.51)	
CEO Duality		0.0178	(+)/(-)		0.0710*	(+)/(-)
		(0.40)			(1.89)	
Busy Board	0.0619*	0.0327		-0.0255	-0.0101	
	(1.71)	(0.78)		(-0.93)	(-0.32)	
Firm Age	0.00879***	0.00876***		0.00190*	0.000510	
	(7.23)	(5.94)		(1.87)	(0.43)	
FCF	0.227**	0.255**		0.401***	0.341***	
	(2.02)	(2.06)		(3.78)	(2.76)	
MTB	-0.0434***	-0.0448***		-0.0233***	-0.0249***	
	(-4.98)	(-4.38)		(-3.22)	(-2.94)	
RD	0.189	0.0371		0.0290	-0.140	
	(1.06)	(0.18)		(0.18)	(-0.74)	
Capital	-0.0585	-0.108		0.323	0.453	
	(-0.19)	(-0.31)		(1.19)	(1.38)	
Debt	0.0972	0.130		0.0563	0.0553	
	(1.24)	(1.46)		(0.88)	(0.80)	
EBIT	-0.245**	-0.255**		-0.166*	-0.111	
	(-2.50)	(-2.24)		(-1.80)	(-1.02)	
EBIT_Lag	0.0622	0.0437		0.0626	0.0127	
	(1.02)	(0.62)		(1.00)	(0.17)	
Block %	0.000175	-0.000224		0.00278***	0.00178**	
	(0.22)	(-0.23)		(6.05)	(4.09)	
Industry FE	Yes	Yes		Yes	Yes	
Year FE	Yes	Yes		Yes	Yes	
Observations	22981	16488		22147	15889	
Adjusted R-squared	0.295	0.286		0.202	0.200	

t-statistics in parentheses. * p<0.10 ** p<0.05 *** p<0.01. Robust standard errors with firm-level clustering.

Table 3: Knowledge Specialization Benefit. For all regressions, we use OLS estimation and include industry and year fixed effects. *Has Executive Comm* is 1 when the board has an executive committee. *Has Finance Comm* is 1 when the board has a finance committee. Other variables are defined in Table 1.

	Has Executive Comm		Has Finance Comm	
	(1)		(2)	
	Coefficient	Prediction	Coefficient	Prediction
Ln(MVE)	0.00437	No relationship	0.0192***	(+)
	(0.64)		(3.67)	
Prop Ind	0.0396	No relationship	0.135***	(+)
	(1.00)		(4.34)	
Board Size	0.0241***	(+)	0.0197***	(+)
	(7.64)		(8.00)	
Board Tenure	0.0189***	(+)	-0.000645	(+)
	(9.26)		(-0.45)	
# Analysts	-0.00134	(+)	0.00157	(+)
	(-0.92)		(1.28)	
Analyst St. Dev	0.00743	(-)	0.00216	(-)
	(0.36)		(0.13)	
Busy Board	0.0371**		0.0295**	
	(2.35)		(2.10)	
Firm Age	0.00317***		0.00366***	
	(5.16)		(6.68)	
FCF	-0.00704		-0.00290	
	(-0.16)		(-0.08)	
MTB	-0.00220		-0.00654***	
	(-0.65)		(-2.64)	
RD	-0.206***		-0.0257	
	(-2.99)		(-0.45)	
Capital	-0.191		0.0708	
	(-1.43)		(0.66)	
Debt	0.104***		0.0339	
	(2.92)		(1.21)	
EBIT	-0.0669*		-0.0661**	
	(-1.83)		(-2.28)	
EBIT_Lag	0.0235		-0.0287	
	(1.02)		(-1.52)	
Block %	-0.000734**		0.0000523	
	(-2.13)		(0.19)	
Industry FE	Yes		Yes	
Year FE	Yes		Yes	
Observations	22981		22981	
Adjusted R-squared	0.186		0.184	

t-statistics in parentheses. * $p<0.10$ ** $p<0.05$ *** $p<0.01$. Robust standard errors with firm-level clustering.

Table 4: Related Committees. In this table, we survey our dataset for directors who serve on exactly 2 committees on a given board, with one of the committees being the audit committee. That is, we take all directors who serve on the audit committee and one other committee within that same firm in a given year. *# of Committee Positions* is the count of all the directors, within this sample of multi-committee directors, that serve on the specific committee. *# of Committees* is the number of times this committee appears within our sample of firms that have audit committees. *Ratio* is the *# of Committee Positions* divided by *# of Committees* and captures the rate at which multi-committee directors who serve on the audit committee will serve on a certain committee.

	(1) # of Committee Positions	(2) # of Committees	(3) Ratio
Audit	72028	44121	1.63
Conflict of Interest	552	699	0.79
Finance	3974	5084	0.78
Governance	24321	31358	0.78
Loan	38	49	0.78
Compensation	32674	43896	0.74
Public Policy	638	1032	0.62
Pension Committee	456	757	0.60
Diversity	57	106	0.54
Env., Health, Safety	828	1552	0.53
Nominating	2840	5664	0.50
Technology	665	1390	0.48
Compliance / Regulatory	691	1468	0.47
Ethics	106	237	0.45
M&A	236	549	0.43
Strategy	1172	3037	0.39
Investigative	58	171	0.34
Other	479	1646	0.29
Litigation	97	353	0.27
Executive	1813	9075	0.20
Search	76	374	0.20
Equity	257	1822	0.14
Shareholder Meetings	0	33	0.00
Total	144056	154473	

Table 5: Expertise, Experience and Multi-Committee Directors. For all regressions, we use OLS estimation and include director and year fixed effects. The sample only includes outside directors. Other Firm Controls refer to the following firm characteristics: *Busy Board, FCF, MTB, RD, Capital, Debt, EBIT, EBIT_Lag, Block %*. All variables are defined in Table 1.

	On Multiple Comm		On 3 or More Comm	
	(1)		(2)	
	Coefficient	Prediction	Coefficient	Prediction
Financial Expert	0.0701***	(+)	0.0789***	(+)
	(10.17)		(11.23)	
Tenure	0.00856***	(+)	0.00824***	(+)
	(8.75)		(8.64)	
# Comm	0.105***		0.153***	
	(38.21)		(53.57)	
Ln(MVE)	0.00204		-0.0101***	
	(0.64)		(-3.27)	
Prop Ind	-0.132***		-0.237***	
	(-7.05)		(-13.45)	
Board Size	-0.0240***		-0.0252***	
	(-21.23)		(-21.57)	
Board Tenure	-0.0103***		-0.00520***	
	(-10.74)		(-5.56)	
# Analysts	-0.00102*		-0.000781	
	(-1.84)		(-1.44)	
Analyst St. Dev	-0.0158		0.00529	
	(-1.60)		(0.62)	
Director FE	Yes		Yes	
Year FE	Yes		Yes	
Other Firm Controls	Yes		Yes	
Observations	133754		133754	
Adjusted R-squared	0.065		0.110	

t-statistics in parentheses. * p<0.10 ** p<0.05 *** p<0.01. Robust standard errors with director-level clustering.

Table 6: Busyness and Multi-Committee Directors. For all regressions, we use OLS estimation and include director and year fixed effects. The sample only includes outside directors. Other Firm Controls refer to the following firm characteristics: *Busy Board, Firm Age, FCF, MTB, RD, Capital, Debt, EBIT, EBIT_Lag, Block %.* All variables are defined in Table 1.

	On Multiple Comm			On 3 or More Comm		
	(1)	(2)		(3)	(4)	
	Coefficient	Coefficient	Prediction	Coefficient	Coefficient	Prediction
Board Busyness	0.00178		(-)	0.00214		(-)
	(0.58)			(0.82)		
Comm Busyness		-0.0122***	(-)		-0.0146***	(-)
		(-9.41)			(-11.27)	
Financial Expert	0.0701***	0.0699***	(+)	0.0789***	0.0786***	(+)
	(10.17)	(10.19)		(11.23)	(11.3)	
Tenure	0.00859***	0.00800***	(+)	0.00827***	0.00758***	(+)
	(8.77)	(8.27)		(8.66)	(8.09)	
# Comm	0.105***	0.104***		0.153***	0.151***	
	(38.21)	(38.00)		(53.57)	(53.5)	
Ln(MVE)	0.00205	0.00172		-0.0101***	-0.0105***	
	(0.65)	(0.55)		(-3.26)	(-3.43)	
Prop Ind	-0.132***	-0.130***		-0.237***	-0.234***	
	(-7.05)	(-6.95)		(-13.45)	(-13.36)	
Board Size	-0.0240***	-0.0237***		-0.0252***	-0.0248***	
	(-21.23)	(-21.12)		(-21.57)	(-21.56)	
Board Tenure	-0.0103***	-0.0102***		-0.00520***	-0.00508***	
	(-10.73)	(-10.72)		(-5.56)	(-5.48)	
# Analysts	-0.00102*	-0.00102*		-0.000779	-0.000783	
	(-1.84)	(-1.86)		(-1.44)	(-1.46)	
Analyst St. Dev	-0.0158	-0.0151		0.00523	0.00614	
	(-1.61)	(-1.54)		(0.61)	(0.73)	
Director FE	Yes	Yes		Yes	Yes	
Year FE	Yes	Yes		Yes	Yes	
Other Firm Controls	Yes	Yes		Yes	Yes	
Observations	133754	133754		133754	133754	
Adjusted R-squared	0.065	0.065		0.110	0.113	

t-statistics in parentheses. * p<0.10 ** p<0.05 *** p<0.01. Robust standard errors with director-level clustering.

Table 7: Do committees cause an increase in board size? For all regressions, we use OLS estimation and include firm and year fixed effects. The difference-in-differences estimator is *NoGovernance*Post-Treatment*. *# of MCD* is the number of directors who sit on 2 or more committees on the board. The sample is construted by examining firms in 2001 who do not have a governance committee, but have met the independence requirement (majority of directors are independent). Then this sample is matched to a post-year (2003, 2004, 2005). Each post-year regression contains data from 2001 and only that post-year.

	Post-Year: 2003		Post-Year: 2004		Post-Year: 2005	
	(1) Board Size	(2) # of MCD	(3) Board Size	(4) # of MCD	(5) Board Size	(6) # of MCD
NoGovernance*Post-Treatment	0.274***	1.376***	0.300***	1.542***	0.252**	1.635***
	(3.04)	(12.68)	(3.05)	(12.82)	(2.26)	(12.32)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2486	2486	2447	2447	2398	2398
Adjusted R-squared	0.015	0.250	0.021	0.235	0.041	0.247
t-statistics in parentheses. * p<0.10 ** p<0.05 *** p<0.01. Robust standard errors with firm-level clustering.						

Table 8: Task-Division Efficiency Benefit. For all regressions, we use OLS estimation and include industry and year fixed effects. *# of Board Meetings* is the number of times the board met during the fiscal year. *Has Executive Comm* is 1 when the board has an executive committee. *Has Finance Comm* is 1 when the board has a finance committee. Other variables are defined in Table 1.

| | # of Board Meetings | | | |
| | (1) | | (2) | |
	Coefficient	Prediction	Coefficient	Prediction
Has Executive Comm	-0.255**	(-)		
	(-2.38)			
# Comm			0.398***	(-)
			(8.23)	
Ln(MVE)	0.0493		0.0132	
	(1.05)		(0.28)	
Prop Ind	1.611***		1.433***	
	(5.84)		(5.18)	
Board Size	0.0773***		0.0272	
	(3.36)		(1.15)	
Board Tenure	-0.109***		-0.123***	
	(-8.71)		(-9.85)	
# Analysts	0.0111		0.0118	
	(1.15)		(1.22)	
Analyst St. Dev	0.696***		0.667***	
	(3.62)		(3.44)	
Busy Board	-0.0114		-0.0450	
	(-0.11)		(-0.42)	
Firm Age	0.00236		-0.00167	
	(0.77)		(-0.54)	
FCF	0.608		0.514	
	(1.27)		(1.08)	
MTB	-0.236***		-0.217***	
	(-8.71)		(-8.10)	
RD	0.341		0.330	
	(0.44)		(0.43)	
Capital	-0.305		-0.255	
	(-0.27)		(-0.23)	
Debt	0.744***		0.661***	
	(2.95)		(2.65)	
EBIT	-1.796***		-1.679***	
	(-3.93)		(-3.69)	
EBIT_Lag	-1.016***		-1.038***	
	(-2.95)		(-3.05)	
Block %	0.00502*		0.00529*	
	(1.71)		(1.81)	
Industry FE	Yes		Yes	
Year FE	Yes		Yes	
Observations	22147		22147	
Adjusted R-squared	0.083		0.091	

t-statistics in parentheses. * p<0.10 ** p<0.05 *** p<0.01. Robust standard errors with firm-level clustering.