The Changing Nature of Corporate Board Activity

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Abstract

Boards are working harder over time, but they may not be working better. Using a comprehensive sample of board data from 1996 to 2010, we document that a large proportion of board activity is carried out by committees. Pre-SOX, 36% of board activity takes place in committees. This increases to 47% post-SOX. Since board activity levels have risen substantially over time, this means more board activity is carried out in the absence of insiders. This change does not appear to be value-enhancing. Board committees are relatively understudied, but our results suggest that ignoring them leads to a very incomplete picture of board governance.

JEL classification: G30; G34; G38

Keywords: Board; Committee; Sarbanes-Oxley; Delegation; Independence; Activity; Insiders

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Abstract

Boards are working harder over time, but they may not be working better. Using a comprehensive sample of board data from 1996 to 2010, we document that a large proportion of board activity is carried out by committees. Pre-SOX, 36% of board activity takes place in committees. This increases to 47% post-SOX. Since board activity levels have risen substantially over time, this means more board activity is carried out in the absence of insiders. This change does not appear to be value-enhancing. Board committees are relatively understudied, but our results suggest that ignoring them leads to a very incomplete picture of board governance.

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1 Introduction

Boards of directors are an important focus of policy responses to corporate scandals and crises. Yet, it is unclear that governance requirements resulting from political and regulatory action make boards better. Although boards became more independent and expanded their committee duties following the Sarbanes-Oxley Act of 2002 and changes in the NYSE and NASDAQ listing standards, many still blamed them for the financial crisis of 2007-2008. The academic evidence that these mandated changes improved board effectiveness is also inconclusive.

One possible explanation why boards may not appear to be getting better is that the reforms do not go far enough. Another explanation is that by targeting board structure and composition, reforms either do not change how the boards functions or change it in ways that reduce their effectiveness. For example, more independent boards may be more likely to question managers, but they may have fewer opportunities to do so if they spend more time on committees that are fully independent as per the listing rules. Similarly, if independent directors lack information, then more independent committees may be less effective. In this paper we examine these issues by using board and committee activity to measure the functioning of the board. We use publicly available data to construct quantifiable measures of activity that incorporate multiple dimensions of board structure. These measures enable us to establish the importance of committee activity and to show how boards have changed over time. We then examine whether these changes appear to be for the better.

To develop our measures of board activity, we build upon the common practice of using board meetings as a measure of board activity. This measure was used most prominently in Vafeas (1999), who showed that the number of board meetings increases following poor performance. Numerous other studies since include the number of meetings as a measure of activity. Because board size and composition change slowly over time for a given firm, we believe the number of meetings is a good indicator of activity levels within a firm. However, in cross-sectional comparisons it may also be important to factor in how many people are meeting. For example, it is not clear that a board with 5 directors who meet 10 times exerts more effort than a board of 10 directors who meet 5 times. Since most firms pay their directors both on a per-director basis and on a per-meeting basis (see e.g. Adams and Ferreira, 2007) the total amount of compensation the two firms pay their boards could be similar. This suggests that the amount of effort is similar. To factor in the number of

people attending meetings we use the concept of a "Director-meeting", which is simply a director-meeting observation.[1] [2]

We construct measures of activity at both the board and director level. The first is a measure of total board activity. Next we construct a measure of delegation of activity to committees, "Committee Focus", which is the fraction of activity of the board that is performed by committees. We construct analogous measures of activity at the director level. Total activity at the director level is simply the total number of meetings a director attends. "Committee Focus" at the director level is the proportion of committee meetings the director is scheduled to attend. Finally, we construct measures of how much activity directors devote to the different functions of the board. Boards should monitor management to protect the interests of shareholders. However, directors often describe that they also have a role in setting strategy (e.g. Mace, 1971; Lorsch and MacIver, 1989; Demb and Neubauer, 1992). In addition, the law in some states allows directors to consider the interests of non-shareholder stakeholders, such as employees and the community, in their decision-making. Thus, we broadly classify what boards do into three, not necessarily mutually exclusive, categories of monitoring, providing strategic advice and dealing with non-shareholder stakeholders (see e.g. Pfeffer and Salancik, 1978; Zahra and Pearce, 1989; the American Bar Association, 1994; Dallas, 1996, Johnson, et al., 1996 and Jensen, 2001).

In developing these measures, we assume that the set of committees the board has indicates the tasks the board performs on a regular basis. We assume that their committee work reflects the board's day-by-day activities because committee structure appears to be fairly stable over time. Thus the work of committees is likely to be routine work that the board feels comfortable delegating. In accordance with this view, a director interviewed by Lorsch and MacIver (1989, p. 59) remarked: "In my experience, I have observed that the work of the board is done in committees." Similarly a director of Sears, Roebuck and Company remarked in 1999: "A company is run by and large by its committees. The full board only deals with exceptional circumstances." Furthermore, the American Bar Association's Corporate Director's Guidebook (1994) emphasizes that the audit, compensation and nominating committees are the main committees in which directors carry out their oversight duties (see

[1] We do not currently take into account that some directors may have missed meetings. Proxies generally disclose only enough information to enable us to calculate the number of scheduled meetings, not the exact attendance of directors for each type of committee. Attendance problems of directors have decreased post-SOX, thus the rise in activity between the pre-SOX period and the post-SOX period that we document is likely to be underestimated.

[2] Because we cannot measure the length of a meeting, we weight all meetings equally.

also the Committee on Corporate Laws, 1979).

To examine trends in how boards function, we assemble the most complete database on US boards and their committees we are aware of. The two most commonly used data sets in the board literature are RiskMetrics and BoardEx. While both are useful, they each have limitations. RiskMetrics has a longer time dimension but only covers S&P 1500 firms. BoardEx has a bigger cross-section but a shorter time dimension. To minimize the time-series limitations of BoardEx and the cross-sectional limitations of RiskMetrics, we take the union of the unregulated firms in these two samples as our base sample.[3] We then fill in missing data by using grammatical learning algorithms to search the text of proxy statements and extract information. Since we discard all committee data from RiskMetrics-for reasons we elaborate on later-this requires collecting complete data on committees for all RiskMetrics firms that are not also in BoardEx. This also requires collecting the number of meetings for all committees. Our final sample contains complete data on board structure, director characteristics, committee type, membership and activity for between 1500 and 5000 firms every year from 1996 to 2010.

We first show that board structure is extremely stable over time, but board activity is not. Total board activity has increased substantially over time, driven primarily by an increase in monitoring committee meetings. Next we document that board committee activity represents a large percentage of total board activity. For our full sample, it shifts from 36% percent in the pre-SOX time period to 47% percent in the post-SOX time period. For S&P 1500 firms it shifts from 36% to 52% post-SOX. Coupled with the rise in board independence post-SOX, this means independent directors are meeting more often in the absence of insiders. The percentage of committee activity that is carried out without any insiders in S&P 1500 firms is 21% pre-SOX and 41% post-SOX. Moreover, independent directors are working harder on a per-person basis.

Next, we examine whether board activity appears to be a good proxy for the functioning of the board. If so, in line with Vafeas (1999), we would expect activity to increase following poor performance. We show that our activity measures are significantly negatively related to stock returns at the firm level. This correlation also holds at the director level even after including firm and director effects. What this tells us is that directors allocate more of their activity to relatively underperforming firms in their directorship portfolios. In contrast, we

[3]We exclude financials and utilities because their boards have different types of committees and potentially slightly different functions. We analyse these types of firms separately.

do not find that committee focus is correlated with stock returns. Consistent with the fact that board structure appears stable over time, firms do not appear to set up new committees or change their membership in response to performance shocks.

We then examine whether more active boards are better and the role of committee focus. We regress a standard proxy for Tobin's Q on activity and focus measures and various firm-level controls. To address endogeneity problems, we include firm fixed effects and conduct instrumental variable analyses. To construct an instrument we leverage the cross-sectional dimension of the data by using the history of each firm's directors on other boards. For each director-firm-year we compute the director's average total activity at other firms prior to the observation year. Our instrument is the board-level average of individual directors' activity history outside the firm. The rationale behind our instrument is that we believe a board's activity should be influenced by individual directors' experiences. But because these experiences occur outside the firm-and primarily in the past-we believe it is unlikely they are correlated with performance except through variables already included in our regressions. One might argue that directors with a history of more activity may be attracted or attractive to firms with certain characteristics. We control for this to the best of our ability by including firm fixed effects, proxies for firm size, leverage, diversification, volatility and diversification. To examine the role of delegation when activity increases, we control for committee focus but also interact committee focus with activity measures. Because committee focus appears "sticky", we do not separately instrument our committee focus measures in these specifications.

We find that working harder does not mean boards work better. Board activity is negatively related to firm performance. The negative relationship appears to be concentrated in firms with more committee focus, particularly those in which there are fewer interactions between independent directors and insiders. Our results suggest a different unintended side effect of SOX than mentioned in previous literature. SOX dramatically increased total board activity. But increases in activity are not sufficient to improve board functioning. In the presence of delegation, more activity can lead to worse decision-making.

We contribute to the literature in several ways. To our knowledge this is the first paper with data on firms' entire committee structure in a panel setting. Thus, we believe we are the first to document that the number of committees has not changed much over time, but that the activity of committees and the type of activities have changed significantly. Second, we complement existing studies of board activity that rely on board structure measures by using novel measures of board activity. These measures account for multiple dimensions of

board structure at the same time and also enable us to categorize board activity according to different board functions. We believe our results suggest that these measures may provide additional insights into what boards do. Such measures may also prove more useful for testing theories about specific functions of the board than measures of board size and composition. For example, many argue that board size and independence are proxies for both monitoring and advising. Because the two roles cannot be disentangled for these proxies, it is difficult to interpret empirical results for board size and composition in terms of specific theories of board functions.

2 Background and Hypotheses

The regulatory environment shaping the corporate governance of publicly listed firms in the United States experienced a paradigm shift from 2002 through 2004. Firms, which previously had flexibility in structuring board and committee oversight mechanisms, needed to comply with a number of newly promulgated requirements. Nearly all of these requirements focused on structural elements of the board of directors and committees.

The majority of the changes in the regulatory environment were mandated by the NYSE and NASDAQ stock exchanges in parallel. In fact, while the Sarbanes-Oxley Act (SOX) received much attention from academics, the press, and politicians, its structural corporate governance requirements were limited to mandates on audit committees. The corporate governance changes were a response to a number of corporate scandals. In several of these scandals, "independent"auditors were either complicit or negligently unaware of accounting fraud. SOX attempted to directly address the root cause of the scandals by severing the link between auditors and insiders, requiring that auditors report directly to an audit committee composed of independent directors.

The exchange proposals, consisting of NYSE's Corporate Governance Proposal and the NASDAQ's Independent Director Proposal, were far more specific than SOX, touching many aspects of board and committee structure. The exchange proposals required that boards contain a majority of independent directors. These proposals also required that boards adopt specific structures, essentially mandating that firms have (i) a nominations committee responsible for identifying and nominating directors and (ii) a compensation committee responsible for designing renumeration packages of key executives. Moreover, both these committees needed to be composed entirely of independent directors.

The conditions imposed by SOX and the exchanges emphasize committees of the board. However, committees were (and continue to be) relatively ignored by academic and practitioner research. Thus, the committee requirements do not appear to draw from research on committees. Instead, they extrapolate from research suggesting that boards need independent directors to reach a restrictive condition for committees. Whereas the requirements necessitate that boards consist of a majority of independent directors, auditing, nominating, and compensation committees must be comprised entirely of independent directors. Taken together, the SOX and exchange listing requirements imply that even a single non-independent director on a key corporate committee creates a deleterious conflict of interest.

2.1 Hypotheses

Interestingly, the requirements introduced from 2002 through 2004 are specifically tailored to each function of the board in isolation and do not consider the performance of the board as a whole. In essence, the requirements detailed above simply enumerate observable and enforceable board characteristics. Each requirement was individually perceived to be a "best practice,"but the collective impact of mandating uniform structural requirements to firms with heterogeneous needs does not appear to have been considered. While the finance literature may not have significant analysis on how structural variables influences board effectiveness, the psychology literature suggests that mandated structural changes to corporate boards and committees can have a significant impact.

Ilgen, Hollenbeck, Johnson, and Jundt (2015) review findings from psychological research on important relationships between team structure and team performance. The research suggests that splitting director activity across different functional roles can have negative effects on performance. Functional team structures, such as those imposed by Sarbanes-Oxley, are less able to cope in challenging environments than flat team structures in which team members share responsibilities.

Given this research, we hypothesize that boards in which directors focus on committee activities to be less effective than those in which directors focus on board activities. Importantly, this prediction should hold in equilibrium. Whereas firms were relatively unconstrained before Sarbanes-Oxley, the bill introduced requirements that forced boards to dramatically shift the effort and structure of key committees. Our results suggest that the changes in committee effort and structure occurred during the SOX transition period between 2002 and 2004. Moreover, these changes appear to be persistent. Pre- and post-SOX measures of

committee focus are relatively constant.

> *Hypothesis 1:* Delegation of board activity to committees results in less effective boards.

Hollenbeck et. al. (2002) argue that the strong performance of teams with flat structures in complex environments arises because flat structures ensure all team members form complete mental models of the problem. Therefore, mandating that only independent directors are eligible to serve on audit committees, for example, can make it difficult for non-independent directors to incorporate important monitoring related information in their decision making. Our second hypothesis captures the idea that informational discrepancies among directors can impair board performance.

> *Hypothesis 2:* Board effectiviness decreases as independent directors spend more time operating separately from firm insiders.

3 Data

We analyze how the activity and delegation of a firm's boards of directors responds to performance and affects value using a large panel of publicly traded U.S. firms. The core of our data consists of a unique dataset on the composition and activity of boards of directors. For each firm-year in the sample, we collect board-level data consisting of (i) directorial appointments to the board, (ii) the names of all committees of the board and their composition, and (iii) the number of meetings held by the board and each committee.

Much of these data is not compiled by widely available datasets, but instead can only be found in the definitive proxy statements (DEF 14A) that each firm is required to file annually with the SEC under Section 14(a) of the Securities Exchange Act of 1934. To operationalize this large-scale data collection, we employ natural language processing (NLP) algorithms that analyze the underlying grammatical structure of sentences, identifying the contextual interrelationships among words. This technique, to our knowledge, has not been used previously in the finance or economics literature.

We supplement the board-level information with data on firm financial performance and stock returns. We take firm financial information from the Compustat's annual fundamentals table. Stock return and volatility data are derived from The Center for Research in Security Prices (CRSP) daily data. Details on the construction of the dataset follow.

3.1 Sample Construction

Our sample consists of unregulated firms firms found in two boards of directors databases, BoardEx and RiskMetrics Directors Data (RiskMetrics). The sample of firms and years covered by the two databases differs significantly. BoardEx begins with annual reports filed in 2000; RiskMetrics begins with annual reports filed in 1995. However, while the RiskMetrics data covers a longer time period than BoardEx, it contains a smaller number of firms. The RiskMetrics universe emphasizes firms found in the S&P 1500 (in some fiscal years the sample includes 400 to 500 widely held companies not included in the S&P 1500). BoardEx, on the other hand, contains information on a wide cross-section of firms for much of the sample. For its first three years (2000-2002), BoardEx contained data on between 1,500 and 2,000 firms. The number of firms covered increased considerably in the following two years, growing to approximately 3,800 in 2003 and to approximately 4,700 in 2004. Beginning with 2005, the number of firms in BoardEx is relatively stable, remaining in a range between 5,000 and 6,000 firms.

We take the union of firm-years found in the two databases to minimize the time-series limitations of BoardEx and the cross-sectional limitations of RiskMetrics. As detailed in the following sections, the BoardEx data is more detailed and accurate at the committee-level. Hence, we use the BoardEx observation whenever a firm is in both databases in a single year. When a firm only appears in RiskMetrics for a given year, we use the database's information on the directors, but correct the committee data as described later.

Databases are merged to Compustat data using CUSIP codes whenever possible. We are able to match all RiskMetrics firm-year source observations to Compustat. However, we are less successful using CUSIP codes for BoardEx. In many cases, BoardEx firm CUSIP codes do not match those found in Compustat. We match BoardEx firms without a CUSIP match based on firm name. Our BoardEx data uses the most current name for all firm observations in the database; historical records are updated to reflect any change in name. However, BoardEx provides a full history of the firm's name. We use all these options to perform a name match. Whenever a match on name is unsuccessful, we use Internet searches to identify the Compustat observation that corresponds to the BoardEx firm. Compustat matches are not available for over a hundred firms in BoardEx, which are either private or headquartered outside the United States.

The sample excludes firms in the financial services and utilities sectors. The structure of

boards and committees in financial services firms differs greatly from those in other industries. Financial services conglomerates often contain separate boards of directors for each subsidiary bank. A large company may report the activities of several distinct boards of directors. As it is unclear how to aggregate director activity for these firms to create an activity measure comparable to that for industrial firms, we drop these firms from the sample. Utility firms, due to strict regulations, have unique board and committee activity characteristics and are also dropped from the sample.

3.2 Directorial Appointments

BoardEx and RiskMetrics both contain data on the directors of each firm. We classify these directors into three categories: (i) inside directors, (ii) affiliated directors, and (iii) independent directors. RiskMetrics directors are identified using similar classifications. An inside director is classified as "E"(executive director), an affiliated director is classified as "L"(linked director), and independent directors are marked as "I". Our BoardEx data does not include such clean classifications, instead splitting directors into executive and non-executive directors and provided a description of the director's role. We consider an independent director to be someone whose board role includes the word "independent"and an inside director to be someone with an ED (executive director) director type. All other directors are consider affiliated.

We match directors across the database to ensure we have a full history of each director's experience. RiskMetrics reuses director identifiers and, therefore, these identifiers are unsuitable to determine the unique set of directors in the database. Consequently, we build our own unique set of directors in the combined dataset. To do so, we begin by taking the unique director name identifiers from BoardEx. Then, we match RiskMetrics directors to BoardEx directors. For each director-observation in both databases, we build a list of companies with which the director was associated. Initially, we define a match between BoardEx and RiskMetrics to occur when director names exactly match and the directors share a company association. The company association need not occur in the same year, which allows us to bridge the time between the start of RiskMetrics data and that of BoardEx. If a director match is not found using this approach, we perform a fuzzy match on the director's name using both edit distance (Damerau-Levenshtein) and sound-based (Metaphone) algorithms, while maintaining the requirement that the director share a firm history. The remaining unmatched directors in RiskMetrics are then matched to BoardEx by name only, which

matches approved by reviewing the affiliated companies' proxy statements to ensure the potential match refers to the same person. Finally, any remaining directors in RiskMetrics are assumed to be unique to the database and are added to our sample without a matching director in BoardEx.

3.3 Committees and their Composition

We require detailed information on all the committees supporting the board of directors of each firm in order to build an accurate picture of board activity. There is a large degree of heterogeneity in the number and types of committees. While the median firm in our sample had three committees during a fiscal year, several firms maintained a far greater number. The board of directors of United Airlines, for example, maintained 10 committees (Executive, Audit, Compensation, Compensation Administration, Competitive Action Plan, Labor, Independent Director Nomination, Outside Public Director Nomination, Pension and Welfare Plans Oversight, and Transaction Committees) for the 1998 fiscal year.[4]

While BoardEx provides the full list of committees and their members, RiskMetrics committee data is both restrictive and (potentially) misleading. RiskMetrics provides committee memberships for four types of committee functions: Audit, Compensation, Governance, and Nominating. Committees that fall outside of these designated functions are not recorded in the data. Many of the aforementioned United Airlines committees are not recorded in RiskMetrics. In addition, when multiple committees have similar functions, RiskMetrics selects one as a representative committee. For example, United Airlines had an Independent Director Nomination Committee and an Outside Public Director Nomination Committee. The committee membership presented in BoardEx is for the Outside Public Director Nomination Committee, committee members unique to the Independent Director Nomination Committee do not have a nomination role in the database. Moreover, RiskMetrics disaggregates committees with multiple functions into multiple observations. For example, the proxy statement filed by Briggs and Stratton for the 1998 fiscal year indicates that the firm had two committees, an Audit Committee and a Nominating, Compensation and Governance Committee.[5] Members of the single Nominating, Compensation and Governance Committee are recorded as having these three distinct committee functions in RiskMetrics. Therefore,

[4] This proxy statement may be accessed at http://edgar.sec.gov/Archives/edgar/data/100517/0000950137-99-000464.txt

[5] This proxy statement may be accessed at http://www.sec.gov/Archives/edgar/data/14195/0000950124-98-004843.txt.

naive use of RiskMetrics data can result in an overstatement of the number of committees of a firm.

Committee data is used as-is for sample firm-years with source data from BoardEx. Given the limitations of RiskMetrics committee data, we ignore committee information provided by RiskMetrics. Instead, we collect committee names and memberships by manually reviewing proxy statements.

We classify each committee across three core functional responsibilities: (i) monitoring, (ii) strategy, and (iii) stakeholder engagement. While most firm use mundane names that clearly enumerate committee responsibilities, other firms use esoteric names that obfuscate committee roles. Since 2004, Marriott International's Board of Directors has included a Committee for Excellence, which has a charter to promote diversity throughout the company. Hence, categorization of committee activity needs to account for regularly occurring committees and those that arise from the idiosyncrasies of corporate initiatives.

We categorize the committee functions using both committee name and source documents. Initially, for each committee, we split the committee name into its list of enumerated responsibilities. A "Nominating, Governance, and Compensation"committee, for example, is considered to have three defined roles. Each of these roles is then classified based on name into monitoring, strategy, and stakeholder engagement. We review source proxy statements when the committee role is unclear. After each constituent role has been categorized, we aggregate the committee functions into a measure of the committees responsibility, assuming that each role listed in the committee name has an equal share of the committees work. In other words, the committee-level classification measure is an average of the categorical ranking of its constituent roles. For example, a committee that had two monitoring functions, one strategic function, and one stakeholder function would be considered to be 50% monitoring, 25% strategy, and 25% stakeholder engagement.

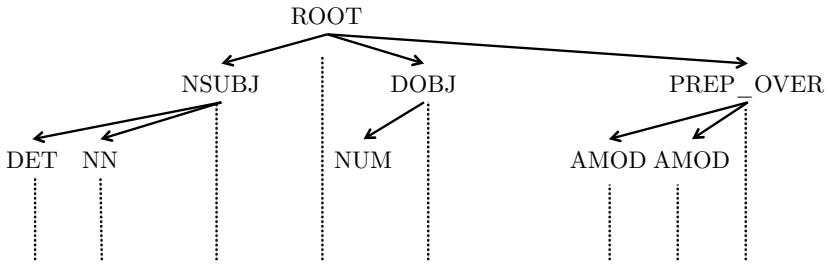
3.4 Boards and Committee Activity

Empirical tests of our hypotheses requires data on board and committee activity. Unfortunately, such data is not available in commonly used corporate governance databases. Researchers must review the source definitive proxy statements (DEF 14A) to find out how often boards and committees meet. Given that our panel includes over 33,000 firm-year observations, manual data collection is not ideal.

We use advances in computation linguistics to overcome the difficulty in collecting data for our full panel of firm-year observations. Our technique analyzes the underlying grammatical structure of proxy statements. The technique used differs significantly from natural language processing techniques commonly used in finance. Commonly used textual analysis tools in finance, such as key word searches or tonal analysis, analyze words out of context. However, given the innumerable ways firms can articulate information, these techniques are generally unable to extract numerical data in a robust manner. By grammatically analyzing sentences, we are able to consider words in context, identifying their usage and interrelationships for communicating information.

The Stanford CoreNLP, created by the Stanford Natural Language Process Group, is the software that permits our analysis. The CoreNLP software embeds a computer learning algorithm that has been trained to parse sentences, providing the grammatical interrelationships between words. For each pair of words forming a grammatical relationship in a sentence, the "dependencies"output of the CoreNLP yields the (i) governing word, (ii) the dependent word, and (iii) the type of grammatical relationship between the governing and dependent words. Therefore, the CoreNLP does not simply tag words with a part-of-speech and keep them in isolation. It identifies which words are related grammatically and the types of relationships.

A few examples will make the power of this approach clear. Consider a basic sentence describing the activity of a committee: "The audit committee met 4 times over the last fiscal year."The dependency output from the CoreNLP can be visually represented by the following tree:

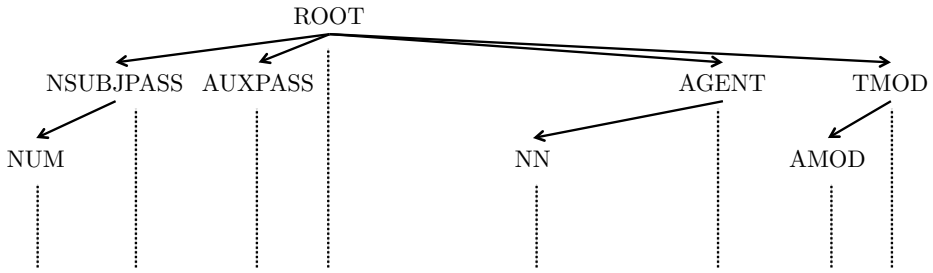


The audit committee met 4 times over the last fiscal year.

The tree identifies the verb "met"as the root of the sentence. It shows that there is a relationship through this verb between the subject "committee", which is marked with a nominal subject (*nsubj*) grammatical type, and the object "times", which is marked with a direct-object (*dobj*) grammatical type. The type of committee, "audit", is identified by

the noun compound modifier relationship (*nn*) of the subject "committee". The number of meetings, "4", is identified as a numeric modifier (*num*) of the object "times".

Similar relationships between words holds even if the sentence structure changes significantly. For example, consider a simple passive voice sentence:



Five meetings were held by the compensation committee last year.

Despite the differences in sentence structure between the passive voice and active voice examples, the grammatical structures are remarkably similar. In the passive voice, a committee, marked as the agent of the root verb, held meetings, marked as the passive nominal subject (*nsubjpass*). As with the active voice case, the type of committee, "compensation", is a noun compound modifier of the "committee"and the number of meetings, "five", is a numeric modifier of "meetings".

3.4.1 Benefits of Grammatical Analysis

There are three key benefits of this approach. First, grammatical analysis reduces the number of ways of conveying information. While there are a myriad of ways of verbalizing information about the activity of boards and committees, there is, in effect, only one underlying grammatical structure linking an entity with the number of meetings it holds. Whereas naive NLP techniques may need to adapt to a multitude of possible formulation of word orders in key sentences, grammatical techniques need only focus on a few key structures. This focus makes grammar-based parsing robust and accurate.

Second, this approach does not suffer from issues that plague naive NLP techniques. Grammatical analysis considers words and the context in which they are used. Naive NLP techniques, on the other hand, generally look at words without context. Naive techniques often incorporate ad-hoc rules designed to patch this intrinsic shortcoming. For example, key word searches are frequently used to find information in documents. However, these searches necessitate that researchers place an upper bound on the number of words between key words.

Such bounds are designed to allow for flexibility in the way sentences are structured, but can create false positives. Grammatical techniques, on the other hand, are able to identify clauses that intervene between the governing words and its dependent. Great distances between words due to intervening clauses make keyword searches not viable, as they may lead to an algorithm that picks up a large amount of non-relevant information. However, the grammatical parsing technique still identifies the simple grammatical relationship regardless of intervening clauses.[6]

Third, grammatical analysis easily allows for sentences that contain multiple pieces of information. Firms often disclose all the meetings of its committees in a single sentence. One such example is "During the last fiscal year, the Audit Committee met five times, the Compensation Committee met three times, and the Nominating and Governance committee met once."Grammatical parsing of this sentence creates a nested structure. Each clause discussing a committee and its meetings is recognized individually and, therefore, can be easily identified as containing relevant information for our study.

3.4.2 Grammatical Data Collection

Mathematically, the grammatical structure of a sentence is most easily represented by a labelled directed graph. A labelled directed graph consists of nodes connected by edges that indicate direction and type. For a given sentence grammar, the nodes of the graph are the words of the sentence. The edges of the graph link the words from governing word to dependent word and are labelled by the type of grammatical relationship. The previously described tree structure, which presents a direct hierarchy from governing word to dependent word, is a useful expositional tool. However, it does not permit all possible sentence grammars. Two words may share both a governing-dependent and a dependent-governing relationship, either directly or indirectly through other words. Such cyclical relationships break the tree structure, but are allowed in directed graphs.

After representing sentences as a directed graph, we identify key grammatical relationships

[6] For example, Bruker Corp.'s proxy statement for the 2008 fiscal year included the following statement: "The Audit Committee of the board of directors, which is currently comprised of Brenda J. Furlong, Collin J. D'Silva and Richard A. Packer, each of whom satisfy the applicable independence requirements of the SEC rules and regulations and NASDAQ Marketplace Rules, met six times during the 2008 fiscal year."Naive word pattern rules will have trouble with this sentence as there are 38 words between the subject "committee"and the root verb "met". The grammatical parsing technique, on the other hand, identifies the relationship between the subject and the verb. In essence, a grammatical rule allows for implementation of algorithms that intelligently eliminate clauses that are not of interest. This grammatical approach extracts the meeting-related content in this complex sentence to "The Audit Committee met six times."

between words in sentences describing either board or committee activity. The words and relationships mirror those described in the examples above. We allow for a several other words to comprise the information about board or committee meetings. But, we always keep the number of words modest to ensure we do not generate false data, never allowing for more than a few alternative of a word. Similarly, as the Stanford CoreNLP contains a descriptively rich set of grammatical relationships, we modestly expand on the types of permitted grammatical relationships beyond those in the examples.

For example, in the active voice grammatical pattern, we look for a nominative subject of either a board or committee. The root verb may be met, held, or conducted. And the object is meeting, time, or occasion, or their pluralized forms. The object may appear as either a direct object, a clausal complement (*ccomp*), temporal modifier (*tmod*), or a preposition of the word "on"(*prep_on*).

We use four grammatical relationships to find data in a proxy statement on the number of meetings held by the board of directors or its committees. These include the active voice grammatical pattern described previously. We have a second pattern that looks at passive voice sentences. Two other grammar patterns, one active voice and one passive voice, process cases when a committee did not meet during a fiscal year.

Once a relationship has been identified, we extract the number of committee meetings. These generally show up as a numeric modifier of the object. However, when a committee meets infrequently (e.g., "the committee met once"), an object will not be present. Instead the number of meetings is found in the word "once"or "twice,"which appear as adverbial modifiers (*amod*) or indirect objects (*iobj*) of the verb. Additionally, a committee that matches one of the patterns for a non-meeting committee will not have a number of meetings and is instead assigned zero meetings for the fiscal year.

The type of committee is found by looking at words that are dependent noun compound modifiers or adjectival modifier (*amod*) of the governing word "committee."In the case of a committee with multiple roles, all descriptive words link directly to the governing "committee."So, for a Nominating and Governance Committee, "nominating"and "governance"will both be direct dependents of "committee."Companies often name committees using the preposition "on", as in a Committee on Governance. In these cases, the type of committee is marked with the prepositional-on relationship (*prep_on*) by CoreNLP. Finally, in some cases, a firm may spend a paragraph discussing the composition, charter, and activity of a committee. As such, the sentence discussing activity may referred to the entity generically as

"the committee.". In such cases, the algorithm scans the paragraph to find the most recently mentioned committee type.

In order to extract data on the number of meetings for both the board of directors and committees from a proxy statement, we first split each filing into its constituent sentences. As grammatical parsing of a sentence is the most computational intensive part of our approach, we screen the sentences to ensure they have words comprising one of the candidate grammatical patterns described above. Sentences passing the filter are grammatically parsed. Our grammatical patterns are matched to the parsed sentence data using an exhaustive sub-graph search and the information from any matching labelled directed sub-graph is recorded.

3.5 Descriptive Statistics

- Insert Table 1 about here -

Table 1 reports the number of firms in the sample on an annual basis and in aggregate. Annual counts are based on the year in which a firm's fiscal year ends. The sample begins in 1996 and ends in 2010. For the period from 1996 through 1999, the sample is almost entirely composed of observations from RiskMetrics. The sample transitions to BoardEx data beginning in 2000, the first year for which BoardEx data is available for a large number of firms. The sample consists of 65% firm-year observations from BoardEx and 35% from RiskMetrics in 2000. The BoardEx share increases to approximately 81% in 2001 and to approximately 84% in 2003. Beginning with 2004, BoardEx is responsible for the majority of the firm-year observations with 98% of the observations in the combined sample. RiskMetrics provides less than 10 unique observations not covered by BoardEx beginning with fiscal year ends in 2006.

- Insert Table 2 about here -

Table 2 reports summary statistics on board activity and firm financial performance. In Panel A, activity is defined as the total number of director-meetings that occurred in a fiscal year. It is the product of the size of entity (board or committee) multiplied by the number of members. So, a board with seven directors that met five times over a fiscal year would have an activity measure of 35 director-meetings. On average, board activity was 60.5 director-meetings for the full sample. Committee meetings were also a significant part of

activity. The average firm's total committee activity was 50.1 director-meetings, representing approximately 45% of total activity. Panel B presents these figures, indicating the average activity of directors on boards. The average board's director had 7.3 board meetings and 6.0 committee meetings each fiscal year.

Panel C provides an indication that director activity is dependent on the type of director. Committee Focus is the average director's percent of total annual meetings spent with committees. The average director has 43.8% of her meetings in committees. Fully Independent Committee Focus is the average director's percent of total annual meetings spent with committees composed entirely of independent directors. The average Fully Independent Committee Focus is 31.5%. By construction, Fully Independent Committee Focus is 0 for all inside and affiliated directors. Therefore, this figure suggests that independent directors have a significant number of meetings separate from the firm's inside and affiliated directors.

The descriptive averages on activity in Table 2, Panels A, B, and C do not provide sufficient information on how director activity has changed over time. Nor do these descriptive statistics provide a good sense of the underlying heterogeneity in director activity across inside, affiliated, and independent directors. In the next section, we explore time-series trends in the time series of board and director activity, explicitly examining the impacts of mandatory changes to board activity imposed by the Sarbanes-Oxley Act of 2002 and the significant differences in the activity of inside, affiliated, and independent directors.

4 Trends in Board Structure and Activity

Our data allows us an unparalleled view of the evolution of corporate board structure and activity over a 15-year period that contained corporate scandals and a global financial crisis. In Figures 1 through 4, we present a visual history of board structure over this period. To minimize the impact of changes in sample composition for the years in which RiskMetrics and BoardEx data are combined, we restrict ourselves to firms that appear in RiskMetrics for the purpose of illustrating the major trends in the data. Thus, the trends examine firms in the S&P 1500. Results using the full sample are similar. Since we rely on RiskMetrics to classify directors as inside, affiliated, or independent prior to 2000 and BoardEx for these classifications thereafter, the graphs involving director classifications are less smooth than the other graphs. We indicate the classification switching point in the figures.

- Insert Figure 1 about here -

In Figure 1, we document basic trends in the two most commonly studied features of board structure-board size and board composition. As expected, board independence increases around the passage of SOX and the changes in the NYSE and NASDAQ listing standards. Average board size is very stable over time. Hence, firms did not, on average, comply with requirement to contain a majority of independent directors by simply adding new directors. Instead, inside directors were removed and replaced by independent directors.

The stability in board size is mirrored in committee structure. Figure 2 shows trends in average committee numbers, size and independence by type-monitoring (solid line), strategy (dashed line) and stakeholder (dotted line). The averages are conditional on having committees of a given type. Despite the emphasis in SOX and the listing standards on audit, nominating/governance and compensation committees,[7] Panel A suggests that rather than adding new committees, firms expanded committee duties. Panel B shows that, like board size, average committee size has remained stable over time. Panel C shows that the increase in board independence following SOX and the listing standards flowed into committee composition.

- Insert Figure 2 about here -

SOX and the exchanges' listing standards emphasized structural elements of boards and committees. They did not consider activities of the board. However, figure 3, Panel A suggests that the regulations precipitated a major change in monitoring committee activity. The panel shows the average number of meetings by type: board (grey line), monitoring (solid line), strategy (dashed line) and stakeholder (dotted line). The total number of annual meetings on monitoring approximately doubled after the introduction of SOX. Board, strategy committee, and stakeholder committee meetings are roughly flat throughout the sample period.

As mentioned earlier, the regulations isolated distinct elements of board and committee structure, without necessarily considering the combined effects of multiple recommendations. Figure 3, Panels B and C, demonstrate that the regulations resulted in significant delegation of responsibilities to committees. Panel B shows "Committee Focus" and Panel C shows "Independent Committee Focus". The previous trends demonstrated the stability of board

[7] The NYSE listing standards (see http://nysemanual.nyse.com/LCMTools) have the following three committee requirements: (1) Listed companies must have a compensation committee composed entirely of independent directors; (2) listed companies must have an audit committee that satisfies the requirements of Rule 10A-3 under the Exchange Act; and (3) listed companies must have a nominating/corporate governance committee composed entirely of independent directors.

and committee structure, but an increase in monitoring meetings around SOX. Consistent with these results, committee focus changes sharply; it is stable over time pre- and post-SOX, but shifts upward between 2002 and 2004.

- Insert Figure 3 about here -

Finally, Figure 4 demonstrates that the most significant effect of the regulations was to increase independent director activity on committees. Panels A, B, and C examine the activity levels of individual directors broken down by type of director and type of activity. While SOX and the listing requirements removed inside directors from monitoring roles, the economic impact of these requirements was very small. Insiders did very little monitoring before 2002. Even so, the trend in monitoring by insiders is slightly negative. The downward trend in monitoring is far more pronounced for affiliated directors. However, these downward trends in monitoring activity for inside and affiliated directors are more than outweighed by a large increase in monitoring by independent directors, who attend nearly twice as many monitoring committee meetings after 2004 than they did before 2002.

- Insert Figure 4 about here -

These figures provide several new insights into board governance. First, they illustrate the importance of committee activity. Second, they show that board structure remains stable over time but that the governance reform occurring around SOX led boards to change board composition and increase activity. The result of the change in board composition is that more board activity is being carried out by independent directors-much of it in committees.

5 Are Boards Working Better?

While the figures demonstrate that board and committee activity has changed over time, key questions remains. Have the changes in board structure and activity altered board effectiveness, measurably affecting firm value? Sarbanes-Oxley mandated that firms alter the structure of key committees. Most notably, audit committees could no longer include inside directors. At the same time, additional disclosure requirements from the bill necessitate more activity. Monitoring committee activities increased sharply between 2002 and 2004.

In this section, we explore how the changes in board activity necessitated by Sarbanes-Oxley have affected firm value. We begin with an analysis of the relationship between board

activity and stock returns. The results demonstrate the activity reacts to firm performance, but committee structure does not change with firm performance. We then leverage these findings, performing ordinary least squares (OLS) and instrumental variable (IV) panel data analysis to see how the changes in board and committee structure have affected firm value.

5.1 Variation in Activity and Committee Focus

Table 3 presents results of OLS regressions of activity measures on stock returns. The regressions control for board characteristics, such as the number of directors and the percent of independent directors, that a large body of finance research suggests may be associated with board effectiveness and stock returns. We also control for firm characteristics that should be correlated with both returns and activity. These include measures of firm size (assets and the number of employees), firm age, growth opportunities (research and development expenditures), and business complexity (the number of operating segments). As the previous results show boards in larger and older firms are more active than their peers. Similarly, boards in complex firms should be, on average, more active than boards managing simple firms. Our controls also include the volatility of stock returns, which should be correlated with returns and reflect operational and financial uncertainty that boards need to address.

Table 3, columns (1) through (3) shows a strong statistical relationship between total board activity and stock returns. Total board activity is defined as the number of director-meetings in a fiscal year. All specifications include firm and year fixed effects. Standard errors are clustered by firm. Column (1) shows that boards respond to negative firm performance by holding more meetings of the board of directors. Similarly, column (2) demonstrates that committee activity also increases with poor stock returns. A one standard deviation negative stock return results in an increase of 0.97 director-meetings annually and 0.43 committee meetings. Finally, column (3) shows that the above relationships hold for total activity. A one standard deviation negative return results in 1.36 additional director-meetings combined. The average firm in our sample held 110.610 director-meetings in the average fiscal year. Therefore, the increase in activity is not particularly meaningful economically. A one standard deviation negative return results in only a 1.2% increase in activity.

- Insert Table 3 about here -

The responses in board activity to stock returns arise from director-level activity and not from changes in board compositions. Directors may prefer certain levels of activity. These

preferences may be correlated with firm fixed effects in equilibrium. The dependent variables in columns (4) through (6) of Table 4 are director activity measures. Director activity is the number of meetings in a fiscal year of the board and committees the director is a member. All specifications include firm, director, and year fixed effects. Standard errors are double clustered by firm and director. Columns (4), (5), and (6) demonstrate statistically significant relationships between stock returns and board meetings, committee meetings, and total meetings, respectively. The effect, however, is not particularly important economically. A one standard deviation negative annual return results in approximately 0.17 additional meeting annually for a director.

The board and director level point estimates are roughly equivalent economically. The average board size in the sample is 7.5 directors in the sample. The coefficient relating total annual director-meetings to stock returns is -4.919 in column (3), which, when averaged over 7.5 directors, corresponds to -0.656 total annual meetings per director. This estimate is relatively close to the -0.618 point estimate using the director-level data in column (6).

Unlike board and director activity, committee focus measures do not appear to change with stock returns. Table 4, columns (1) and (2) present estimation results from regressions analyzing board level committee focus variables. Both specifications include firm and year fixed effects with standard errors clustered by firm. Column (1) shows that the average percent of time directors spend on committees does not exhibit a statistically significant relationship with stock returns. Column (2) demonstrates that the average percent of time directors spend on committees composed entirely with independents also does not change with returns. Columns (3) and (4) repeat the analysis using director-level data. We only analyze the values for independent directors, as these are the types of directors who can be members of fully independent committees. Both specifications include firm, director, and year fixed effects with standard errors double clustered by firm and director. The committee focus variables do not show a statistically or economically meaningful relationship with stock returns.

- Insert Table 4 about here -

These results are consistent with a view in which boards and committees respond to firm performance, but do so in way that does not alter important structural characteristics with the board. In untabulated results, we find no evidence that boards create or eliminate committees depending on stock returns. The composition of these committees also does not

change. Therefore, the evidence suggests that boards hold more meetings when firms are performing poorly. However, this effect is very small economically. Critically, the roles of the firm's directors do not appear to change. Activity increases proportionally across all of a board's functional roles. The average director's division between board and committee meetings is statistically unrelated to stock returns. Moreover, independent directors maintain a constant focus on committee meetings in which insiders are absent.

5.2 The Impact of Committee Focus on Firm Value

The previous regression results suggest that boards respond to negative firm performance through additional meetings. Therefore, it is difficult to empirically test the above hypothesis due to endogeneity between firm value and committee activity. To address this concern, we implement an instrumentation technique that leverages the cross-sectional and time-series information in our panel.

Our instrumentation approach relies on the assumption that a director's past experience outside the firm influences their beliefs regarding optimal levels of activity, but is unrelated to firm performance shocks. Alternatively stated, this assumption requires that a firm's current value shock is unrelated to the past value shocks of other firms where directors are also board members. This assumption simply requires semi-strong market efficiency. Historical value shocks to other companies are publicly known and, therefore, should not impact a firm's current value. Similarly, activity of boards are publicly disclosed in end-of-year proxy statements. Consequently, past board activities should be incorporated into current market prices.

For each director of a firm, we find all past activity of the director while serving as a director of another firm. Each director's past activity is averaged to yield a measure of the director's activity history. This approach will yield a unique historical average for each firm with which the director is associated. Hence, the historical average is a director-firm-year measure. The instrument is the average across the board members of the individual director-firm-year historical activity measures.

The instrument is only available when a firm's board includes at least one director's that has served on the board of another firm in our sample. Due to our use of a large cross-section and long time-series, the majority of boards in our sample meet this requirement. The number of observations in our instrumental variable specifications is approximately 87% of the total number of observations in the ordinary least squares specifications. Moreover

the effectiveness of the instrument relies critically on the identification of directors across BoardEx and RiskMetrics. The high observability of the instrument suggests our director matching procedure (described earlier) was effective.

Tables 5 and 6 presents the results testing the hypothesis that functional board structures reduce firm value. The dependent variable in both tables is firm value, as measured by the natural log of Tobin's Q. Tobin's Q is the market value-to-book value ratio of assets, where the market value of assets is the book value of assets, net of the book value of common/ordinary equity, plus the market value of equity. If a functional structure board structure impairs performance, then regressions should show a negative coefficient on an interacted variable of board activity and functional delegation.

Table 5 tests the hypothesis using meetings in both board and committee meetings. Total Activity is the average number of board and committee meetings attended by directors over a fiscal year. We use a director-average activity measure instead of total board-director meeting to ensure the variable does not mechanically proxy for board size and induce multicollinearity problems in estimation. Columns (1) through (4) use Committee Focus to measure the degree to which a firm uses a functional board structure; columns (5) through (8) use Fully Independent Committee Focus.

- Insert Table 5 about here -

The results suggest that functional structures hurt board effectiveness and firm value. Columns (2), (4), (6), and (8) demonstrate a negative relationship on the interaction between Total Activity and committee focus measures. This effect is statistically significant in both instrumental variable specifications (columns (4) and (8)). It is also statistically significant for the OLS specification using Fully Independent Committee Focus (column (6)).

The economic significance of an increase committee focus is also significant. We focus on the coefficients in the column (8) instrumental variables estimate; the coefficients in column (4) may be inflated due to the weakness of the instrument in that specification. After SOX, Fully Independent Committee Focus increased by approximately 0.151 for the average firm in the sample. The average director in the sample was involved in 13.279 total meetings in a fiscal year, as seen in the summary statistics. Therefore, the impact of a change in Fully Independent Committee Focus is to decrease log Tobin's Q by -0.007 (this estimate is found by estimating the impact using the above values and the coefficient estimate on the

interaction between total activity and committee and the coefficient estimate on committee focus). Hence, firm value decreased by approximately 0.7%.

Finally, the results suggest that activity is not always beneficial. Specifications in columns (1) through (3) and (5) through (7) show a statistically significant negative relationship between board activity and value. However, the statistical significance of this effect disappears in both instrumental variable specifications that include interacted activity and committee focus regressors.

The prior results use Total Activity as the proxy variable for board effort. It is possible, however, that total meetings are not critical to board functioning and firm value. Stakeholder engagement committees, for example, do not make material strategic decisions. To focus on meetings in which strategic decisions are most likely to occur, we repeat the analysis of Table 5 using Board Meetings as the measure of activity. Table 6 present the results. The results continue to support the hypothesis that functional board structures, as measured by committee focus variables, hurt firm performance. As the measure of firm activity is different between tables 5 and 6, it is not appropriate to compare the relative magnitude of the coefficient estimates. Moreover, the instrumental variables seem to suffer from weak instrument problems, suggesting that a director's historical total activity outside the firm is a better predictor of current total activity than board activity. Therefore, we estimate the economic significance estimate using the coefficients in the OLS specification. The average firm in the sample held 7.312 board meetings per year. Hence, the observed increase in Fully Independent Committee Focus over time the average firm's Tobin's Q by 2.9%.

- Insert Table 6 about here -

6 Conclusion

We provide the first in-depth analysis of board committee structure using complete data on board structure from 1996 to 2010. Pre-SOX, 36% of board activity takes place in committees. This increases to 47% post-SOX. While boards and directors are working harder over time, they do not appear to be working better. We argue one reason for this is precisely that much of the increase in activity takes place in a delegated environment.

Our results suggest that board committees are important for board functioning and can no longer be ignored. While collecting data on committee structure and constructing our proxies for board behavior involves a substantial amount of work, the increasing use of web-based

data extraction methods-such as the ones we use in this paper-should reduce the costs of constructing these proxies in the future. We believe the effort is worth it as the proxies are able to provide a more nuanced picture of what happens in the boardroom than traditional measures of board structure.

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A Variable Definitions

A.1 Activity and Delegation Measures

Board Activity is total number of director-board meetings for a firm over a fiscal year, calculated as the number of meetings of the board multiplied by the number of directors.

Total Activity is the total number of director-meetings for a firm over a fiscal year. Meetings may occur with either the board of directors or with a committee of the board. The board component is computed as described above under Board Activity. The committee activity component is the total over all a firm's committees of the product of the number of committee meetings and the number of committee members.

Committee Focus is the average director's percent of total annual meetings spent with committees. It is initially computed for each director-firm-year observation as the number of meetings with committees divided by the total number of meetings (board and committees). These director-level values which are averaged over all members of a board of directors to calculate the firm-year Committee Focus value.

Fully Independent Committee Focus is the average director's percent of total annual meetings spent with committees composed entirely of independent directors. It is initially computed for each director-firm-year observation as the number of meetings with committees composed entirely of independent directors divided by the total number of meetings (board and committees). These director-level values which are averaged over all members of a board of directors to calculate the firm-year Fully Independent Committee Focus value. By construction, Fully Independent Committee Focus is 0 for all insider and affiliated directors.

A.2 Dependent and Control Variables

Book Leverage is the total book value of long-term and current debt over the book value of total assets.

Board Size is the natural log of one plus the number of directors on the firm's board.

Log Firm Age is the natural log of the firm's age, where firm age is defined as the number of years since the firm's financial data entered Compustat.

Log Assets is the natural log of the book value of total assets.

Log Number of Employees is the natural log of one plus the number of employees (in thousands) of the firm.

Log Number of Segments is the natural log of one plus the number of operating business segments reported in the Compustat Segments database.

Percent Independent Directors is the number of independent directors on the board over the total number of directors.

R&D is total annual R&D expenditures normalized by the book value of total assets at the start of the fiscal year.

R&D Indicator is defined to be 1 if the firm had non-zero R&D expenditures over the fiscal year and 0 otherwise.

Return on Assets is operating income before depreciation, normalized by the book value of total assets at the start of the fiscal year.

Tobin's Q is the market value-to-book value ratio of assets. The market value of assets is taken as the book value of assets, net of the book value of common/ordinary equity, plus the market value of equity, defined as closing share price at the end of the fiscal year multiplied by the number of common shares outstanding.

Stock Return is the cumulative annual stock return including dividends over the fiscal year.

Stock Volatility is the annualized standard deviation of daily stock returns over the fiscal year.

Table 1: Annual Observations by Database

The table reports the number of firms in the sample on an annual basis and in aggregate. Annual counts are based on the year in which a firm's fiscal year ends. The BoardEx and RiskMetrics column indicates the number of sample firms that were covered by these databases. BoardEx data is used whenever available for director names and classifications, committees of the board, and committee memberships. When BoardEx data is not available, RiskMetrics is used for the names and classifications of directors only; committee names and committee composition are collected manually. The parenthesized numbers in the RiskMetrics column indicate the number of unique observations not covered by BoardEx.

	Number of Observations		
Year	Total	BoardEx	RiskMetrics
1996	1085	0	1085 (1085)
1997	1278	0	1278 (1278)
1998	1301	0	1301 (1301)
1999	1297	51	1296 (1246)
2000	1630	1062	1362 (568)
2001	1650	1337	1158 (313)
2002	1640	1385	1115 (255)
2003	2666	2532	1113 (134)
2004	3132	3072	1113 (60)
2005	3205	3174	1090 (31)
2006	3145	3142	1032 (3)
2007	3147	3143	1045 (4)
2008	2859	2855	1028 (4)
2009	2768	2760	1090 (8)
2010	2246	2246	953 (0)
Total	33049	26759	17059 (6290)

Table 2: Summary Statistics

The table presents summary statistics on 33,049 firm-year observations. *Mean*,*SD*, and Median reports the means, standard deviations, and medians. *p1*, *p25*, *p75*, and *p99* show the 1st, 25th, 75th, and 99th percentile values, respectively. In Panel A, *Board Meetings*, *Committee Meetings*, and *Total Meetings* report the total number of director-entity meetings (calculated as the total over all relevent entities of the product of the number of meetings and the number of members) for board, committees, and combined entities, respectively. In Panel B, these values are averaged over the number of directors in the firm. In Panel C, *Committee Focus* is average director's percent of total annual meetings spent with committees and *Fully Independent Committee Focus* is the average director's percent of total annual meetings spent with committees composed entirely of independent directors In Panel D, *Log Board Size* is the natural log of one plus the number of directors on the firm's board and *Percent Independent Directors* is the number of independent directors on the board over the total number of directors. In Panel E, *Book Leverage* is the total book value of debt over the book value of total assets; *Log Assets* is the natural log of the book value of total assets; *Log Firm Age* is the natural log of the firm's age; *Log Number of Employees* is the natural log of one plus the number of employees (in thousands) of the firm; *Log Number of Segments* is the natural log of one plus the number of operating business segments; *R&D* is total annual R&D expenditures normalized by the book value of total assets; *R&D Indicator* is defined to be 1 if the firm had non-zero R&D expenditures over the fiscal year and 0 otherwise; *Return on Assets* is operating income before depreciation, normalized by the book value of total assets; *Log Tobin's Q* is the log market value-to-book value ratio of assets; *Stock Return* is the cumulative annual stock return including dividends; and *Stock Volatiliy* is the annualized standard deviation of daily stock returns.

			Distribution				
	Mean	SD	p5	p25	Median	p75	p95
Panel A: Activity Measures (Board Total)							
Board Meetings	60.484	32.816	21.000	36.000	54.000	77.000	121.000
Commmittee Meetings	50.098	33.493	12.000	25.000	42.000	67.000	115.000
Total Meetings	110.610	56.986	40.000	69.000	99.000	141.000	219.000
Panel B: Activity Measures (Per Director)							
Board Meetings	7.312	3.350	4.000	5.000	7.000	9.000	14.000
Commmittee Meetings	5.966	3.405	1.500	3.429	5.400	7.889	12.429
Total Meetings	13.279	5.421	6.000	9.333	12.429	16.333	23.571
Panel C: Committee Focus Measures (Board Average)							
Committee Focus	0.438	0.142	0.197	0.340	0.444	0.538	0.660
Fully Independent	0.315	0.131	0.095	0.222	0.317	0.409	0.528
Panel D: Board Structure							
Log Board Size	2.070	0.287	1.609	1.946	2.079	2.303	2.565
Percent Independent Directors	0.683	0.168	0.375	0.571	0.714	0.818	0.889
Panel E: Firm Financials and Performance							
Book Leverage	0.215	0.298	0.000	0.011	0.169	0.327	0.611
Log Assets	2.678	0.850	1.255	2.118	2.691	3.233	4.117
Log Firm Age	2.795	0.713	1.792	2.303	2.708	3.401	3.937
Log # of Employees	0.248	0.928	−1.319	−0.409	0.302	0.898	1.716
Log # of Segments	1.396	0.829	0.000	1.099	1.099	2.197	2.708
Log Tobin's Q	0.604	0.594	−0.137	0.186	0.490	0.913	1.736
R& D Indicator	0.639	0.480	0.000	0.000	1.000	1.000	1.000
R& D	0.089	2.206	0.000	0.000	0.005	0.076	0.323
Return on Assets	0.024	0.392	−0.435	0.006	0.081	0.148	0.292
Stock Return	0.041	0.277	−0.364	−0.105	0.028	0.159	0.477
Stock Volatility	0.551	0.336	0.222	0.346	0.478	0.673	1.112

Table 3: Does Board and Committee Activity Respond to Stock Returns?

The table reports estimation results from fixed-effects models examining the relationship between board and committee activity and stock returns. The dependent variable in column (1) the total number of director-board meetings for a firm over a fiscal year, calculated as the number of meetings of the board multiplied by the number of directors. The dependent variable in column (2) is the total number of director-committee meetings, calculated as the total over all a firm's committees of the product of the number of committee meetings and the number of committee members. The dependent variable in column (3) is the sum of the activity measures in columns (1) and (2). The dependent variables in columns (4) through (6) are the total number of meetings for directors over a fiscal year. Observations are based on directorships, indicating the level of activity of a director at a firm. A director may serve as a board member of multiple firms; in such cases, each directorship is considered separately. Columns (4), (5), and (6) report results for board meetings, committee meetings, and all meetings, respectively. *Stock return* is the cumulative annual stock return including dividends over the fiscal year. All other controls are as defined in Appendix A and are measured contemporanously with the activity and stock return variables. All specifications include firm fixed and year effects. Specifications in columns (5) through (7) also include director fixed effects. Standard errors in columns (1) through (3) are clustered by firm; standard errors in columns (5) through (7) are double clustered by firm and director. t-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Total Annual Director-Meetings per Firm			Annual Meetings per Director		
	Board	Committee	Total	Board	Committee	Total
	(1)	(2)	(3)	(4)	(5)	(6)
Stock Return	−3.484***	−1.509***	−4.864***	−0.414***	−0.204***	−0.618***
	(−6.744)	(−4.055)	(−7.007)	(−3.549)	(−3.518)	(−4.197)
Return on Assets	−0.915*	−0.378	−1.295*	−0.175*	−0.073	−0.248*
	(−1.717)	(−1.107)	(−1.788)	(−1.866)	(−1.199)	(−1.895)
Log Board Size	60.179***	31.864***	92.100***	−0.288	−1.398***	−1.686***
	(40.696)	(23.013)	(40.598)	(−1.514)	(−7.809)	(−5.779)
Percent Independent	−1.071	23.047***	22.249***	−0.146	0.333	0.188
Directors	(−0.571)	(12.127)	(7.625)	(−0.603)	(1.450)	(0.525)
Book Leverage	3.906**	−0.287	3.604	0.685***	0.348*	1.033***
	(2.041)	(−0.190)	(1.211)	(2.890)	(1.759)	(2.827)
Log Assets	4.046***	4.337***	8.266***	0.669***	0.609***	1.278***
	(2.823)	(3.591)	(3.892)	(3.177)	(3.629)	(4.235)
Log Firm Age	5.216***	5.293***	10.627***	1.217***	0.870***	2.086***
	(3.145)	(3.055)	(3.914)	(5.686)	(4.197)	(6.245)
Log # of Employees	−2.249	3.762***	1.516	−0.500**	0.242	−0.258
	(−1.527)	(2.824)	(0.686)	(−2.367)	(1.415)	(−0.870)
Log # of Segments	−0.212	−0.477	−0.678	−0.025	−0.036	−0.061
	(−0.526)	(−1.076)	(−1.010)	(−0.535)	(−0.768)	(−0.847)
R&D Indicator	1.022	−1.783	−1.037	0.068	−0.375**	−0.308
	(0.817)	(−1.144)	(−0.448)	(0.461)	(−2.176)	(−1.215)
R&D	0.794	−1.102**	−0.397	0.047	−0.159**	−0.113
	(1.215)	(−2.215)	(−0.447)	(0.513)	(−2.049)	(−0.890)
Stock Volatility	9.300***	2.311***	11.743***	1.367***	0.239***	1.606***
	(5.544)	(3.622)	(5.427)	(5.297)	(3.037)	(5.226)
N	31999	31999	31999	268023	268023	268023
R^2	0.171	0.416	0.363	0.580	0.580	0.580

Table 4: Does Committee Focus Respond to Stock Returns?

The table reports estimation results from fixed-effects models examining the relationship between committee focus measures and stock returns. The dependent variable in column (1) is board-level *Committee Focus*, which represents the average director's percent of total annual meetings spent with committees. The dependent variable in column (2) if board-level *Fully Independent Committee Focus*, which captures the average director's percent of total annual meetings spent with committees composed entirely of independent directors. Director classifications are based on those provided by BoardEx and RiskMetrics. The two committee focus measures are initially computed for each director-firm-year observation and averaged for all members of a board of directors to calculate the firm-year value. Director-level *Committee Focus* and *Fully Independent Committee Focus* are the dependent variables in columns (3) and (4), respectively. A director may serve as a board member of multiple firms; in such cases, each directorship is considered separately. *Stock return* is the cumulative annual stock return including dividends over the fiscal year. All other controls are as defined in Appendix A and are measured contemporanously with the committee focus and stock return variables. All specifications include firm and year fixed effects. Specifications in columns (4) and (5) also include director fixed effects. Standard errors in columns (1) and (2) are clustered by firm; standard errors in columns (4) and (5) are double clustered by firm and director. t-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Delegation per Firm		Delegation to Independent Directors	
	Committee Focus	Fully Independent Committee Focus	Committee Focus	Fully Independent Committee Focus
	(1)	(2)	(3)	(4)
Stock Return	0.003	−<0.001	0.003	0.002
	(1.239)	(−0.067)	(1.073)	(0.844)
Return on Assets	0.006***	0.001	0.007**	0.007**
	(2.713)	(0.964)	(2.372)	(2.453)
Stock Volatility	−0.016***	0.002	−0.020***	−0.017***
	(−4.152)	(1.012)	(−4.063)	(−3.822)
Log Board Size	−0.072***	−0.014***	−0.066***	−0.071***
	(−11.296)	(−3.161)	(−8.982)	(−9.503)
Percent Independent Directors	0.113***	0.901***	−0.034***	−0.024**
	(11.650)	(127.537)	(−3.231)	(−2.204)
Book Leverage	−0.024***	−0.010**	−0.019***	−0.022***
	(−3.434)	(−2.358)	(−2.676)	(−3.012)
Log Assets	0.007	−0.011**	0.003	−<0.001
	(1.125)	(−2.071)	(0.491)	(−0.033)
Log Firm Age	0.068***	−0.001	0.057***	0.049***
	(8.817)	(−0.122)	(5.909)	(4.869)
Log # of Employees	0.031***	0.011*	0.035***	0.038***
	(4.377)	(1.816)	(4.395)	(4.852)
Log # of Segments	−0.001	0.001	−0.002	−0.002
	(−0.700)	(0.890)	(−0.751)	(−0.759)
R&D Indicator	−0.006	0.001	−0.013*	−0.007
	(−0.885)	(0.306)	(−1.809)	(−1.067)
R&D	−0.007**	−<0.001	−0.006	−0.005
	(−2.198)	(−0.146)	(−1.396)	(−1.249)
N	31863	31778	183861	183861
R^2	0.278	0.792	0.592	0.596

Table 5: Does Board and Committee Activity Respond to Stock Returns?

The table reports estimation results from fixed-effects models examining the relationship between board and committee activity and stock returns. The dependent variable in column (1) the total number of director-board meetings for a firm over a fiscal year, calculated as the number of meetings of the board multiplied by the number of directors. The dependent variable in column (2) is the total number of director-committee meetings, calculated as the total over all a firm's committees of the product of the number of committee meetings and the number of committee members. The dependent variable in column (3) is the sum of the activity measures in columns (1) and (2). The dependent variables in columns (4) through (6) are the total number of meetings for directors over a fiscal year. Observations are based on directorships, indicating the level of activity of a director at a firm. A director may serve as a board member of multiple firms; in such cases, each directorship is considered separately. Columns (4), (5), and (6) report results for board meetings, committee meetings, and all meetings, respectively. *Stock return* is the cumulative annual stock return including dividends over the fiscal year. All other controls are as defined in Appendix A and are measured contemporanously with the activity and stock return variables. All specifications include firm fixed and year effects. Specifications in columns (5) through (7) also include director fixed effects. Standard errors in columns (1) through (3) are clustered by firm; standard errors in columns (5) through (7) are double clustered by firm and director. t-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Total Annual Director-Meetings per Firm			Annual Meetings per Director		
	Board	Committee	Total	Board	Committee	Total
	(1)	(2)	(3)	(4)	(5)	(6)
SOX	2.344***	16.735***	19.213***	0.224***	1.858***	2.082***
	(3.881)	(24.856)	(18.888)	(3.101)	(24.176)	(17.821)
Stock Return	−4.014***	−1.646***	−5.510***	−0.482***	−0.211***	−0.693***
	(−8.461)	(−4.571)	(−8.421)	(−4.557)	(−3.765)	(−5.113)
Return on Assets	−0.819	−0.506	−1.324*	−0.145	−0.080	−0.225*
	(−1.586)	(−1.436)	(−1.842)	(−1.628)	(−1.299)	(−1.771)
Log Board Size	60.106***	31.682***	91.851***	−0.268	−1.430***	−1.698***
	(40.560)	(22.746)	(40.244)	(−1.408)	(−7.917)	(−5.791)
Percent Independent	3.365*	32.964***	36.567***	0.407*	1.549***	1.956***
Directors	(1.819)	(16.914)	(12.454)	(1.746)	(6.675)	(5.560)
Book Leverage	4.078**	−0.810	3.251	0.698***	0.266	0.964***
	(2.170)	(−0.556)	(1.133)	(3.007)	(1.344)	(2.684)
Log Assets	5.906***	10.238***	15.965***	0.837***	1.446***	2.283***
	(4.315)	(8.443)	(7.687)	(4.255)	(8.793)	(7.949)
Log Firm Age	8.673***	18.071***	26.735***	1.381***	2.539***	3.920***
	(7.701)	(17.062)	(15.436)	(8.808)	(17.917)	(16.701)
Log # of Employees	−3.163**	0.021	−3.100	−0.555***	−0.248	−0.803***
	(−2.153)	(0.016)	(−1.399)	(−2.664)	(−1.444)	(−2.685)
Log # of Segments	−0.617*	−0.453	−1.086**	−0.088**	−0.030	−0.118*
	(−1.905)	(−1.275)	(−2.011)	(−2.246)	(−0.782)	(−1.939)
R&D Indicator	1.300	−1.031	−0.010	0.094	−0.278	−0.183
	(1.018)	(−0.634)	(−0.004)	(0.636)	(−1.591)	(−0.711)
R&D	1.074	−0.728**	0.263	0.077	−0.127**	−0.050
	(1.629)	(−2.070)	(0.343)	(0.878)	(−2.027)	(−0.454)
Stock Volatility	7.226***	0.459	7.709***	1.003***	−0.004	0.999***
	(6.425)	(0.992)	(5.821)	(6.072)	(−0.057)	(5.457)
N	31999	31999	31999	268023	268023	268023
R^2	0.163	0.386	0.338	0.576	0.649	0.656

Table 6: Does Committee Focus Respond to Stock Returns?

The table reports estimation results from fixed-effects models examining the relationship between committee focus measures and stock returns. The dependent variable in column (1) is board-level *Committee Focus*, which represents the average director's percent of total annual meetings spent with committees. The dependent variable in column (2) if board-level *Fully Independent Committee Focus*, which captures the average director's percent of total annual meetings spent with committees composed entirely of independent directors. Director classifications are based on those provided by BoardEx and RiskMetrics. The two committee focus measures are initially computed for each director-firm-year observation and averaged for all members of a board of directors to calculate the firm-year value. Director-level *Committee Focus* and *Fully Independent Committee Focus* are the dependent variables in columns (3) and (4), respectively. A director may serve as a board member of multiple firms; in such cases, each directorship is considered separately. *Stock return* is the cumulative annual stock return including dividends over the fiscal year. All other controls are as defined in Appendix A and are measured contemporanously with the committee focus and stock return variables. All specifications include firm and year fixed effects. Specifications in columns (4) and (5) also include director fixed effects. Standard errors in columns (1) and (2) are clustered by firm; standard errors in columns (4) and (5) are double clustered by firm and director. t-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Delegation per Firm		Delegation to Independent Directors	
	Committee Focus	Fully Independent Committee Focus	Committee Focus	Fully Independent Committee Focus
	(1)	(2)	(3)	(4)
SOX	0.073***	0.025***	0.086***	0.100***
	(24.519)	(9.565)	(24.564)	(28.292)
Stock Return	0.004*	−<0.001	0.005**	0.004*
	(1.846)	(−0.131)	(2.093)	(1.784)
Return on Assets	0.006***	0.001	0.005**	0.006**
	(2.702)	(0.858)	(2.031)	(2.018)
Stock Volatility	−0.022***	<0.001	−0.020***	−0.017***
	(−5.703)	(0.226)	(−4.982)	(−4.588)
Log Board Size	−0.070***	−0.014***	−0.067***	−0.072***
	(−10.969)	(−3.074)	(−8.994)	(−9.529)
Percent Independent Directors	0.132***	0.906***	−0.011	0.003
	(13.854)	(135.733)	(−1.068)	(0.260)
Book Leverage	−0.026***	−0.010**	−0.022***	−0.025***
	(−3.763)	(−2.418)	(−3.051)	(−3.403)
Log Assets	0.019***	−0.006	0.027***	0.030***
	(3.023)	(−1.115)	(3.946)	(4.386)
Log Firm Age	0.087***	0.005	0.101***	0.104***
	(16.129)	(1.364)	(15.164)	(14.991)
Log # of Employees	0.023***	0.008	0.020***	0.019**
	(3.306)	(1.226)	(2.639)	(2.497)
Log # of Segments	0.001	0.004***	0.004**	0.006***
	(0.893)	(3.237)	(2.251)	(3.592)
R&D Indicator	−0.005	0.002	−0.011	−0.005
	(−0.713)	(0.363)	(−1.484)	(−0.671)
R&D	−0.007**	<0.001	−0.006	−0.005
	(−2.151)	(0.113)	(−1.412)	(−1.244)
N	31863	31778	183861	183861
R^2	0.266	0.790	0.589	0.591

Table 7: Firm Value and Committee Focus (Panel Specification)

The table reports estimation results from ordinary least squares models examining the relationship between firm value, board of director activity, and committee focus. The dependent variable in all specification is *Tobin's Q*, defined as the market value of assets divided by the book value of assets. The market value of assets is the market value of equity, defined as closing share price at the end of the fiscal year multiplied by the number of common shares outstanding, plus the book value of assets, net of the book value of common/ordinary equity. *Total Activity* is the average number of total meetings (board and committee) attended by the firm's directors in a fiscal year. *Committee Focus* in columns (1) through (3) is the average director's percent of total annual meetings spent with committees. *Fully Independent Committee Focus* in columns (4) through (6) is the average director's percent of total annual meetings spent with committees composed entirely of independent directors. The committee focus variables are defined in Table 6. Controls are as defined in Appendix A and are measured contemporanously with the firm value, total activity, and committee focus variables. All specifications include firm fixed effects and standard errors are clustered by firm. *t*-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Committee Focus			Fully Independent Committee Focus		
	(1)	(2)	(3)	(4)	(5)	(6)
Board Meetings		−0.032***	−0.029***		−0.035***	−0.027***
× Committee Focus		(−4.700)	(−3.317)		(−4.170)	(−2.968)
Board Meetings	−0.013***	−0.002	−0.002	−0.012***	−0.003	−0.003
	(−9.302)	(−0.776)	(−0.787)	(−9.237)	(−1.115)	(−1.158)
Committee Focus	−0.142***	0.047	0.063	−0.148***	0.064	0.117*
	(−4.059)	(0.896)	(0.961)	(−3.329)	(0.964)	(1.688)
Committee Activity			−0.001			−0.005**
			(−0.440)			(−2.546)
Log Board Size	−0.034	−0.036	−0.037	−0.034	−0.036	−0.037
	(−1.419)	(−1.520)	(−1.531)	(−1.415)	(−1.515)	(−1.530)
Percent Independent	0.097***	0.104***	0.104***	0.131***	0.144***	0.118***
Directors	(2.918)	(3.131)	(3.134)	(3.642)	(3.977)	(3.109)
Book Leverage	−0.071	−0.069	−0.069	−0.074	−0.072	−0.071
	(−1.494)	(−1.453)	(−1.449)	(−1.554)	(−1.511)	(−1.497)
Log Assets	−0.433***	−0.433***	−0.433***	−0.434***	−0.434***	−0.433***
	(−14.097)	(−14.111)	(−14.111)	(−14.084)	(−14.122)	(−14.069)
Log Firm Age	−0.322***	−0.317***	−0.318***	−0.329***	−0.326***	−0.323***
	(−9.627)	(−9.518)	(−9.529)	(−9.926)	(−9.882)	(−9.757)

(*Continued*)

Table 7: Continued

	Committee Focus			Fully Independent Committee Focus		
	(1)	(2)	(3)	(4)	(5)	(6)
Log # of Employees	0.112***	0.112***	0.112***	0.110***	0.110***	0.110***
	(3.726)	(3.751)	(3.748)	(3.695)	(3.692)	(3.684)
Log # of Segments	−0.004	−0.004	−0.004	−0.003	−0.003	−0.003
	(−0.532)	(−0.558)	(−0.558)	(−0.446)	(−0.513)	(−0.511)
R&D Indicator	0.004	0.005	0.005	0.005	0.006	0.005
	(0.169)	(0.197)	(0.190)	(0.213)	(0.257)	(0.212)
R&D	0.119*	0.118*	0.118*	0.119*	0.119*	0.118*
	(1.689)	(1.693)	(1.693)	(1.698)	(1.702)	(1.698)
Return on Assets	0.121***	0.121***	0.121***	0.121***	0.121***	0.121***
	(3.692)	(3.705)	(3.702)	(3.701)	(3.717)	(3.710)
Stock Volatility	−0.063***	−0.065***	−0.065***	−0.063***	−0.065***	−0.065***
	(−3.961)	(−4.066)	(−4.066)	(−3.964)	(−4.063)	(−4.058)
N	31863	31863	31863	31999	31999	31999
R^2	0.728	0.729	0.729	0.728	0.729	0.729

Table 8: Firm Value and Committee Focus (Instrumental Variable Specification)

The table reports estimation results from an instrumental variable dynamical panel data model examining the relationship between firm value, board of director activity, and committee focus. The dependent variable in all specification is *Tobin's Q*, defined as the market value of assets divided by the book value of assets. The market value of assets is the market value of equity, defined as closing share price at the end of the fiscal year multiplied by the number of common shares outstanding, plus the book value of assets, net of the book value of common/ordinary equity. *Total Activity* is the average number of total meetings (board and committee) attended by the firm's directors in a fiscal year. *Committee Focus* in columns (1) through (3) is the average director's percent of total annual meetings spent with committees. *Fully Independent Committee Focus* in columns (4) through (6) is the average director's percent of total annual meetings spent with committees composed entirely of independent directors. The committee focus variables are defined in Table 6. Controls are defined in Appendix A and are measured contemporanously with the firm value, total activity, and committee focus variables. All specifications use cross-sectional instruments to control for endogeneity. These instruments address total activity and firm value. The instruments leverage the cross-sectional information in the panel, using the history of the firm's directors activity outside the firm. For each director-firm-year observation, we initially compute the average total activity over the director's prior history at other firms. The instrument is the average of the individual board members' prior other-firm average total activity. Directors that did not serve on the board of another firm are ignored. The instrument is also interacted with the committee focus measures to instrument for the activity-committee focus interacted explanatory variable. All specifications include firm fixed effects and standard errors are clustered by firm. t-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Committee Focus			Fully Independent Committee Focus		
	(1)	(2)	(3)	(4)	(5)	(6)
Board Meetings		−0.647**	0.412		−0.631***	0.352
× Committee Focus		(−2.210)	(0.175)		(−2.654)	(0.233)
Board Meetings	−0.105*	0.129**	−0.031	−0.116*	0.085*	0.017
	(−1.780)	(2.412)	(−0.086)	(−1.709)	(1.952)	(0.138)
Committee Focus	−1.555*	2.534**	3.164	−2.158*	2.351**	4.009
	(−1.745)	(2.474)	(1.423)	(−1.679)	(2.463)	(1.194)
Committee Activity			−0.310			−0.289
			(−0.419)			(−0.585)
Log Board Size	−0.150**	−0.176*	−0.189	−0.210*	−0.190*	−0.075
	(−1.971)	(−1.760)	(−1.558)	(−1.859)	(−1.681)	(−0.457)
Percent Independent	0.239**	0.336**	0.224	0.852*	0.828*	−1.496
Directors	(2.376)	(2.135)	(1.072)	(1.839)	(1.717)	(−0.412)
Book Leverage	−0.041	0.005	−0.010	−0.047	−0.006	−<0.001
	(−0.862)	(0.101)	(−0.179)	(−0.975)	(−0.119)	(−0.001)
Log Assets	−0.415***	−0.436***	−0.405***	−0.420***	−0.450***	−0.380***
	(−8.788)	(−9.058)	(−3.922)	(−8.956)	(−10.469)	(−2.605)
Log Firm Age	−0.112	−0.059	−0.326	−0.155	−0.172	−0.096
	(−0.885)	(−0.350)	(−0.599)	(−1.443)	(−1.575)	(−0.406)

(*Continued*)

Table 8: Continued

	Committee Focus			Fully Independent Committee Focus		
	(1)	(2)	(3)	(4)	(5)	(6)
Log # of Employees	0.151***	0.170***	0.119	0.157***	0.144***	0.137**
	(3.701)	(3.299)	(1.061)	(3.640)	(3.308)	(2.516)
Log # of Segments	−0.008	−0.013	−0.004	−0.008	−0.018	−0.002
	(−0.902)	(−1.163)	(−0.218)	(−0.922)	(−1.598)	(−0.074)
R&D Indicator	−0.008	0.004	−0.049	−0.004	0.016	−0.063
	(−0.254)	(0.111)	(−0.383)	(−0.143)	(0.478)	(−0.471)
R&D	0.096	0.087*	0.098	0.101*	0.093*	0.079
	(1.630)	(1.714)	(1.558)	(1.718)	(1.762)	(1.257)
Return on Assets	0.104***	0.099***	0.083	0.104***	0.107***	0.081
	(3.156)	(3.113)	(1.626)	(3.161)	(3.261)	(1.468)
Stock Volatility	0.012	−0.052	−0.028	0.031	−0.051	−0.078
	(0.220)	(−1.219)	(−0.317)	(0.452)	(−1.017)	(−1.292)
N	27724	27724	27724	27724	27724	27724

Table 9: Acquisitions and Board Meetings

The table reports estimation results from fixed-effects models examining the relationship between board meetings, acquistions, and committee focus. The dependent variable in all columns is the total number of board meetings for a firm over a fiscal year. *Acquisition* is an indicator that takes the value of 1 if a firm engaged in an acquisition in a fiscal year. Acquisitions must have a value greater than $1 million and comprise more than 1% of acquirer market capitalization on the announcement date. All other controls are as defined in Appendix A and are measured contemporanously with the activity. Specifications include firm fixed effects and standard errors are clustered by firm. t-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Committee Focus			Fully Independent Committee Focus		
	(1)	(2)	(3)	(4)	(5)	(6)
Acquisition		−0.750**	−1.043***		−1.142***	−1.389***
× Committee Focus		(−2.097)	(−3.173)		(−3.228)	(−4.077)
Acquisition	0.396***	0.718***	0.572***	0.489***	0.841***	0.794***
	(9.743)	(4.156)	(3.706)	(11.449)	(6.424)	(6.212)
Committee Focus	−14.649***	−14.541***	−26.001***	−17.276***	−17.133***	−25.623***
	(−61.704)	(−60.476)	(−94.331)	(−48.739)	(−48.313)	(−59.284)
Committee Activity			0.904***			0.595***
			(73.238)			(38.395)
Stock Return	−0.422***	−0.422***	−0.193***	−0.427***	−0.427***	−0.287***
	(−8.101)	(−8.101)	(−5.508)	(−7.592)	(−7.591)	(−5.986)
Return on Assets	−0.026	−0.026	0.064	−0.037	−0.038	0.015
	(−0.337)	(−0.342)	(1.164)	(−0.493)	(−0.497)	(0.241)
Log Board Size	−1.185***	−1.186***	−0.275***	−1.456***	−1.457***	−0.997***
	(−8.146)	(−8.151)	(−2.658)	(−9.665)	(−9.676)	(−7.532)
Percent Independent	1.550***	1.551***	0.377**	6.104***	6.114***	7.541***
Directors	(7.478)	(7.480)	(2.530)	(25.067)	(25.111)	(32.170)
Book Leverage	0.118	0.120	−0.168	0.101	0.104	−0.082
	(0.618)	(0.629)	(−1.571)	(0.505)	(0.521)	(−0.534)
Log Assets	0.516***	0.516***	0.199*	0.393**	0.398**	0.125
	(3.217)	(3.216)	(1.819)	(2.481)	(2.509)	(0.923)
Log Firm Age	2.012***	2.020***	1.160***	1.501***	1.508***	0.649***
	(11.437)	(11.498)	(9.088)	(8.533)	(8.587)	(4.293)
Log # of Employees	0.159	0.161	0.109	0.170	0.173	0.145
	(0.987)	(0.999)	(1.023)	(1.106)	(1.122)	(1.083)
Log # of Segments	−0.033	−0.031	−0.004	−0.034	−0.031	−0.011
	(−0.820)	(−0.779)	(−0.140)	(−0.814)	(−0.745)	(−0.277)
R&D Indicator	0.009	0.004	0.084	0.055	0.051	0.145
	(0.058)	(0.029)	(0.842)	(0.388)	(0.362)	(1.234)
R&D	<0.001	−0.002	0.036	0.033	0.031	0.080
	(0.003)	(−0.035)	(0.710)	(0.460)	(0.425)	(1.325)
Stock Volatility	0.909***	0.908***	0.540***	0.998***	0.996***	0.798***
	(5.469)	(5.468)	(5.321)	(5.447)	(5.447)	(5.321)
N	31863	31863	31863	31999	31999	31999
R^2	0.679	0.679	0.842	0.644	0.644	0.730

Table 10: Acquisition Cumulative Abnormal Returns and Delegation

The table reports estimation results from ordinary least squares models examining the relationship between returns for an acquiring firm on announcing a merger and committee focus. The dependent variable in all columns is the announcement cumulative abnormal return for engaging in an acquisition. Cumulative abnormal return is defined as the difference between the acquiring firm's daily return and the Standard and Poor's 500 market daily return, aggregated from 2 days prior to 2 days following the merger announcement. Acquisitions must have a value greater than $1 million and comprise more than 1% of acquirer market capitalization on the announcement date. All controls are as defined in Appendix A and are measured contemporanously with the activity and stock return variables. Specifications in columns (2) and (4) include industry fixed effects, defined using Fama-French 48 industry classifications. Standard errors are clustered by firm. *t*-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Committee Focus		Fully Independent Committee Focus	
	(1)	(2)	(3)	(4)
Committee Focus	−0.018***	−0.018***	−0.018*	−0.017*
	(−2.696)	(−2.653)	(−1.815)	(−1.752)
Return on Assets	0.016*	0.015*	0.016*	0.015*
	(1.950)	(1.899)	(1.946)	(1.894)
Log Board Size	−0.003	−0.003	−0.004	−0.004
	(−0.802)	(−0.784)	(−0.860)	(−0.821)
Percent Independent	−0.007	−0.008	−0.002	−0.003
Directors	(−1.164)	(−1.294)	(−0.309)	(−0.443)
Book Leverage	0.020***	0.020***	0.019***	0.020***
	(3.780)	(3.638)	(3.728)	(3.596)
Log Assets	−0.009***	−0.008***	−0.009***	−0.008***
	(−4.140)	(−2.907)	(−4.156)	(−2.860)
Log Firm Age	0.001	0.001	0.001	0.001
	(0.748)	(0.828)	(0.703)	(0.766)
Log # of Employees	0.003	0.002	0.002	0.001
	(1.205)	(0.522)	(1.113)	(0.392)
Log # of Segments	0.002**	0.002**	0.002**	0.002**
	(2.314)	(2.040)	(2.248)	(1.988)
R&D Indicator	<0.001	0.001	<0.001	0.001
	(0.207)	(0.386)	(0.242)	(0.331)
R&D	−0.025***	−0.023***	−0.025***	−0.023***
	(−3.292)	(−3.100)	(−3.266)	(−3.087)
Stock Volatility	0.012	0.012	0.013	0.013
	(0.998)	(0.978)	(1.080)	(1.071)
Industry Fixed Effects	-	Yes	-	Yes
N	9770	9770	9813	9813
R^2	0.020	0.024	0.020	0.023

Table 11: Positive Acquisition Cumulative Abnormal Returns and Delegation

The table reports estimation results from ordinary least squares models examining the relationship between returns for an acquiring firm on announcing a merger and committee focus. The dependent variable in all columns is an indicator that takes a value of 1 if a firm engaging in an acquisition has a positive cumulative abnormal return on announcement of the acquisition. Cumulative abnormal return is defined as the difference between the acquiring firm's daily return and the Standard and Poor's 500 market daily return, aggregated from 2 days prior to 2 days following the merger announcement. Acquisitions must have a value greater than $1 million and comprise more than 1% of acquirer market capitalization on the announcement date. All controls are as defined in Appendix A and are measured contemporanously with the activity and stock return variables. Specifications in columns (2) and (4) include industry fixed effects, defined using Fama-French 48 industry classifications. Standard errors are clustered by firm. t-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Committee Focus		Fully Independent Committee Focus	
	(1)	(2)	(3)	(4)
Committee Focus	−0.018***	−0.018***	−0.018*	−0.017*
	(−2.696)	(−2.653)	(−1.815)	(−1.752)
Return on Assets	0.016*	0.015*	0.016*	0.015*
	(1.950)	(1.899)	(1.946)	(1.894)
Log Board Size	−0.003	−0.003	−0.004	−0.004
	(−0.802)	(−0.784)	(−0.860)	(−0.821)
Percent Independent	−0.007	−0.008	−0.002	−0.003
Directors	(−1.164)	(−1.294)	(−0.309)	(−0.443)
Book Leverage	0.020***	0.020***	0.019***	0.020***
	(3.780)	(3.638)	(3.728)	(3.596)
Log Assets	−0.009***	−0.008***	−0.009***	−0.008***
	(−4.140)	(−2.907)	(−4.156)	(−2.860)
Log Firm Age	0.001	0.001	0.001	0.001
	(0.748)	(0.828)	(0.703)	(0.766)
Log # of Employees	0.003	0.002	0.002	0.001
	(1.205)	(0.522)	(1.113)	(0.392)
Log # of Segments	0.002**	0.002**	0.002**	0.002**
	(2.314)	(2.040)	(2.248)	(1.988)
R&D Indicator	<0.001	0.001	<0.001	0.001
	(0.207)	(0.386)	(0.242)	(0.331)
R&D	−0.025***	−0.023***	−0.025***	−0.023***
	(−3.292)	(−3.100)	(−3.266)	(−3.087)
Stock Volatility	0.012	0.012	0.013	0.013
	(0.998)	(0.978)	(1.080)	(1.071)
Industry Fixed Effects	-	Yes	-	Yes
N	9770	9770	9813	9813
R^2	0.020	0.024	0.020	0.023

Table 12: CEO Turnover and Board Meetings

The table reports estimation results from fixed-effects models examining the relationship between board meetings, CEO turnover, and committee focus. The dependent variable in all columns is the total number of board meetings for a firm over a fiscal year. *CEO turnover* is an indicator that takes the value of 1 if a firm changed CEOs during a fiscal year. All other controls are as defined in Appendix A and are measured contemporanously with the activity. Specifications include firm fixed effects and standard errors are clustered by firm. t-statistics are reported in parentheses. Coefficients marked with ***, **, and * are significant at the 1%, 5% and 10% level, respectively.

	Committee Focus			Fully Independent Committee Focus		
	(1)	(2)	(3)	(4)	(5)	(6)
CEO Turnover		−1.218**	−2.308***		−1.053**	−1.878***
× Committee Focus		(−2.455)	(−5.199)		(−2.099)	(−3.864)
CEO Turnover	0.508***	1.041***	1.277***	0.558***	0.884***	1.009***
	(8.749)	(4.214)	(5.906)	(9.120)	(4.749)	(5.521)
Committee Focus	−14.709***	−14.624***	−26.012***	−17.363***	−17.297***	−25.761***
	(−62.125)	(−61.940)	(−95.144)	(−49.029)	(−49.056)	(−59.731)
Committee Activity			0.905***			0.596***
			(73.676)			(38.664)
Stock Return	−0.404***	−0.405***	−0.184***	−0.408***	−0.408***	−0.272***
	(−7.767)	(−7.785)	(−5.295)	(−7.228)	(−7.235)	(−5.662)
Return on Assets	−0.010	−0.009	0.075	−0.020	−0.019	0.031
	(−0.140)	(−0.117)	(1.357)	(−0.267)	(−0.254)	(0.494)
Log Board Size	−1.199***	−1.193***	−0.269***	−1.472***	−1.465***	−0.996***
	(−8.274)	(−8.231)	(−2.613)	(−9.796)	(−9.763)	(−7.535)
Percent Independent	1.602***	1.599***	0.394***	6.185***	6.187***	7.596***
Directors	(7.756)	(7.740)	(2.651)	(25.446)	(25.459)	(32.387)
Book Leverage	0.137	0.137	−0.165	0.125	0.126	−0.067
	(0.717)	(0.717)	(−1.546)	(0.622)	(0.627)	(−0.433)
Log Assets	0.582***	0.583***	0.221**	0.476***	0.474***	0.178
	(3.665)	(3.669)	(2.033)	(3.026)	(3.016)	(1.317)
Log Firm Age	1.969***	1.961***	1.114***	1.449***	1.439***	0.580***
	(11.199)	(11.156)	(8.748)	(8.227)	(8.165)	(3.831)
Log # of Employees	0.153	0.149	0.095	0.163	0.162	0.135
	(0.955)	(0.931)	(0.891)	(1.066)	(1.060)	(1.004)
Log # of Segments	−0.036	−0.036	−0.008	−0.037	−0.038	−0.018
	(−0.900)	(−0.903)	(−0.274)	(−0.909)	(−0.914)	(−0.448)
R&D Indicator	0.022	0.023	0.096	0.071	0.072	0.163
	(0.153)	(0.154)	(0.968)	(0.508)	(0.512)	(1.391)
R&D	0.013	0.015	0.047	0.049	0.050	0.097
	(0.218)	(0.244)	(0.881)	(0.710)	(0.726)	(1.586)
Stock Volatility	0.892***	0.893***	0.537***	0.977***	0.978***	0.785***
	(5.462)	(5.463)	(5.323)	(5.439)	(5.439)	(5.312)
N	31863	31863	31863	31999	31999	31999
R^2	0.679	0.679	0.843	0.644	0.644	0.730