

**Separation of Ownership and Control:
Implications for Board Composition**

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1. Introduction

When important decision agents do not bear a substantial share of the wealth effects of their decisions, incentive conflicts exist between residual claimants (owners) and decision agents (managers). How organizations control the agency problem caused by such separation of ownership and control has been a great concern to researchers from Smith (1776) and Berle and Means (1932) to Jensen and Meckling (1976) and Fama and Jensen (1983). In this study, we empirically examine the implications of separation of ownership and control for board composition.

Fama and Jensen (1983) theorize that the top-level decision control device within both large and small organizations is a board of directors that deals with the agency problem caused by the separation of ownership and control. The board usually includes both directors who are managers of the firm (inside directors) and those who are not full-time employees of the firm (outside directors). These outside directors are widely believed to play a larger role in monitoring management than inside board members [Weisbach (1988)]. In fact, Fama (1980) argues that “the probability of (top management’s collusion and expropriation of security holder wealth) might be lowered, and the viability of the board as a market-induced mechanism for low-cost internal transfer of control might be enhanced, by the inclusion of outside directors” (p. 293).

Views such as these have led to the movement toward specific board guidelines, typically calling for greater outside representation and hence greater monitoring of management. Institutional investors such as TIAA-CREF have issued specific recommendations for how boards should be structured and run. Some of these board guidelines were codified into law via

the Sarbanes-Oxley Act of 2002, including, for example, a requirement that boards have audit committees that consist only of independent outside directors [Boone et al. (2004)]. An implied assumption of such blanket recommendations and regulations is that a uniform optimal board structure exists across different firms and different industries.

Economists have raised questions regarding this “one size fits all” view. In particular, several recent studies have shown that the forces driving board composition are firm-specific and industry-specific [e.g., Adams and Mehran (2003), Adams and Mehran (2005), Boone et al. (2004), Lehn et al. (2004), and Linck et al. (2006)]. Existing evidence, however, has been largely focused only on firms with publicly traded equity, so very little is known about board composition under alternative ownership structures. While firms with publicly traded equity may be the most prominent organizational form, they only represent a part of the whole continuum of ownership structures in corporate America.

This paper investigates the implications of separation of ownership and control on board composition over a spectrum of ownership structures present in the US property-liability insurance industry. Various ownership structures coexist in the property-liability insurance industry and these ownership structures exhibit various degrees of separation of ownership and control. We hypothesize that agency costs associated with manager-owner conflicts increase with the degree of the separation of ownership and control. Everything else equal, greater agency costs imply a greater need for monitoring by outside directors on the board. Therefore, use of outside directors is expected to increase as the separation of ownership and control gets larger, *ceteris paribus*.

Employing a large sample of property-liability insurance companies exhibiting different degrees of separation of ownership and control, we find strong support for our hypothesis. In

particular, our results show that (1) mutual companies, which represent greater separation of ownership and control than stock companies, are associated with greater use of outside directors than stock companies; and (2) as the separation of ownership and control grows larger among stock firms, from stock companies closely held by management, to stock companies closely held by others (i.e., parties other than management), to stock companies widely held, to stock companies owned by mutuals, the use of outside directors increases accordingly. Overall, the results are consistent with Fama and Jensen's (1983) hypothesis that "separation of residual risk bearing from decision management leads to decision systems that separate decision management from decision control" (p. 304)¹.

This study extends existing research on corporate governance in three primary ways. First, we are able to derive a richer understanding of the general issue of separation of ownership and control by exploring a continuum of ownership structures present in the US property-liability insurance industry. Previous research on separation of ownership and control has largely focused only on companies with publicly traded equity. These companies, by and large, have a large degree of separation of the decision and risk-bearing functions, and thus only represent a part of the spectrum of ownership/control separation in corporate America. By contrast, our research takes advantage of the rich variation in ownership within the property-liability insurance industry, representing the whole spectrum of ownership/control separation. To our knowledge, this study is the first attempt to examine the implications of separation of ownership and control over the continuum of ownership structures. Second, this research helps to expand the very limited current understanding of corporate governance in the insurance industry specifically.

¹ Note that what Fama and Jensen (1983) call separation of residual risk bearing from decision management is simply the well-known *separation of ownership and control*. The paper is titled "Separation of Ownership and Control" and they state clearly in the paper, "What we call separation of residual risk bearing from decision management is the separation of ownership and control that has long bothered students of open corporations" (p. 323).

Except for Mayers et al. (1997), no other published work to our knowledge has systematically examined the implications of separation of ownership and control on board composition in the insurance industry. It is hoped that this research will help fill this void in the insurance literature. Third, by focusing this study on a single industry, our analysis is better able to control for differential effects of regulation and political pressure and allows us to assess more directly the influence of the separation of ownership and control on board composition. The majority of the existing research studies firms across different industries. As Gillan, Hartzell and Starks (2003) suggest, industry factors contribute most of the explainable variation in overall governance structure and appear to dominate time effects and firm factors. Our sample firms are from the same industry and thus are more homogeneous. As such, the likelihood that our results are due to the spurious correlation caused by unobserved heterogeneity is significantly reduced [Blackwell et al. (1994)].

The evidence documented in this research has important policy implications. Underlying SOX and other attempts to impose external rules to regulate the board's size and composition is the apparent view that corporate boards are structured either haphazardly or perversely to yield inefficiently large private benefits to managers [Boone et al. (2004)]. The evidence presented in this paper does not support such views. Instead, the empirical results indicate that firms efficiently structure their boards in accordance with their ownership structures, consistent with the market efficiency theory. Moreover, consistent with previous findings [e.g., Boone et al. (2004) and Linck et al. (2006)], the results indicate that board structure is firm specific and uniform requirements on board composition are unlikely to be effective. Therefore, great caution seems warranted before imposing regulatory actions on corporate governance.

The remainder of the paper is organized as follows: Section 2 reviews the relevant literature. Section 3 develops the hypotheses. Section 4 describes the sample selection. Section 5 presents the empirical framework and reports the results. Section 6 concludes.

2. Literature Review

2.1. Agency problem caused by separation of ownership and control

Jensen and Meckling (1976) define an agency relationship as “a contract under which one or more persons (the principals(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent” (p. 308). The relationship between the stockholders and managers of a corporation with diffused ownership is a classic example of such an agency relationship.

When the manager is the sole equity owner of a firm, there is no separation of ownership and control and thus no agency problem exists between the manager and the owner since the two parties are unified. In contrast, when residual claims to equity are diffused among many outside investors as in the case of most publicly traded corporations, the separation of ownership and control leads to potential divergence between the interests of owners and managers. This agency problem caused by the separation of ownership and control has long been a great concern for economists.

Both external and internal disciplines are identified to deal with such agency problems between managers and owners. External monitoring mechanisms include the outside managerial labor market, monitoring from the capital market by financial analysts, institutional shareholders and block shareholders, and the takeover market. Internal monitoring mechanisms include a natural process of monitoring from higher to lower levels of management, mutual monitoring

among managers, and the board of directors [Fama (1980) and Fama and Jensen (1983)]. Of all monitoring mechanisms, the board is viewed as the “ultimate internal monitor” whose “most important role is to scrutinize the highest decision makers within the firm” [Fama (1980)] and “the common apex of the decision control systems of organizations, large and small, in which decision agents do not bear a major share of the wealth effects” [Fama and Jensen (1983)]. Although the existence of an outside market for control is another force which helps to sensitize the internal managerial labor market, it is the board of directors that provides “a relatively low-cost mechanism for replacing or reordering top managers,” according to Fama (1980).

However, Fama and Jensen (1983) also argue that the board is not an effective device for decision control unless it limits the decision discretion of individual top managers. As a result, corporate boards generally include outside members, that is, members who are not internal managers. According to Fama and Jensen (1983), the effectiveness of board monitoring is enhanced by including outside members because outside directors have incentives to carry out tasks and do not collude with managers to expropriate residual claimants as they are motivated to develop reputations as experts in decision control. Consistent with such argument, Kaplan and Reishus (1990) find that directors of poorly performing firms, who therefore may be perceived to have done a poor job overseeing management, are less likely to become directors at other firms.

2.2. Importance of outside directors as monitors of managers

Winter (1977) argues that outside directors’ monitoring of managers is the most important function of the corporate board. Hermalin and Weisbach (1998) also argue that outside directors are important because a director’s willingness to monitor the CEO increases with his or her independence from the CEO. To investigate the effectiveness of outside directors in monitoring managers, researchers have taken basically two approaches. The first approach is

to relate board composition to certain corporate events such as adopting poison pills or removing CEOs following poor firm performance. The second approach is to examine the relation between board composition and some measure of firm performance. The basic argument behind both approaches is the same; that is, if outside directors are more effective in controlling agency problems, they will ensure that management decisions are consistent with enhancing shareholder value, and this should result in better firm performance. They will also take actions for the best interests of shareholders.

The first approach has been more successful in that the empirical results are more consistent. A few examples include Brickley and James (1987), Weisbach (1988) and Rosenstein and Wyatt (1990). Examining a sample of large banks with diffuse structures of ownership, Brickley and James (1987) find a negative relation between expenditures on salaries and the proportion of outsiders on the board. Weisbach (1988) finds a stronger association between firm performance and the probability of CEO turnover for companies with outsider-dominated boards than for companies with insider-dominated boards. Rosenstein and Wyatt (1990) document a positive stock price reaction to the announcement of appointing an additional outside director and thus provide evidence that investors believe that the appointment of outside directors enhances firm value. All this evidence is consistent with the notion that outside directors promote the interest of shareholders.

Unlike the first group of studies, the second approach, which studies the relationship between board composition and firm performance, has been much less successful. Numerous studies relating board composition to firm performance yield mixed evidence. While some researchers observe a positive relation between outside director representation and firm performance [e.g., Baysinger and Butler (1985) and Schellenger, Wood and Tashakori (1989)],

others find just the opposite [e.g., Vance (1978) and Kesner (1987)], and seemingly more researchers simply find no relation between board composition and firm performance [e.g., Schmidt (1975), MacAvoy, Cantor, Dana and Peck (1983), Molz (1988) and Hermalin and Weisbach (1991)].

The lack of evidence of a direct relationship between board composition and firm performance is not entirely surprising, as corporate performance is expected to be a function of a number of other factors [Bathala and Rao (1995)]. Moreover, board structure is endogenous and such endogeneity may make the relationship between board composition and firm performance hard to interpret. As a result, instead of focusing on what boards do, researchers began asking the question of how boards get to be the way they are.

2.3. Determinants of board composition

While the empirical literature on what boards do is fairly well developed, much less is known about how boards get to be the way they are. Recognizing the lack of research in the literature, Hermalin and Weisbach (1998) model board effectiveness as a function of its independence which, in turn, is a function of negotiations (implicit or explicit) between existing directors and the CEO over who will fill vacancies on the board. Similarly, Raheja (2006) models board structure as the trade-off between maximizing the incentive for insiders to reveal their private information, minimizing coordination costs among outsiders, and maximizing the ability of outsiders to reject inferior projects. Her model predicts that optimal board size and composition are functions of the directors' and the firm's characteristics.

Both Hermalin and Weisbach (1998) and Raheja (2006) are theoretical studies, neither of which empirically tests the predictions of their models. In fact, compared to empirical studies on what boards do, empirical studies on board determinants were quite sparse, probably due to the

high costs of collecting data on boards of directors. However, the series of corporate scandals in recent years (e.g., Enron and WorldCom) and the passage of the Sarbanes-Oxley Act of 2002 have led to unprecedented attention to corporate governance and motivated another wave of research on corporate governance, with board structure as the center of debate. Several contemporary papers such as Lehn, Patro and Zhao (2003), Boone et al. (2004), and Linck et al. (2006), have focused on identifying the driving forces behind board structure for publicly traded companies.

Arguing that the choice of board structure is determined by tradeoffs involving the incremental information that directors bring to boards versus the incremental coordination costs and free rider problems engendered by their additions to boards, Lehn et al. (2003) study a sample of 81 publicly traded US firms that survived the period of 1935 through 2000. Their results show that insider representation is inversely related to firm size and directly related to proxies for growth opportunities.²

Studying a sample of 1,019 industrial firms that went public in the US market from 1988 through 1992 (IPO firms), Boone et al. (2004) document that board independence increases as firms grow in size and diversity over time. They also find that board independence decreases in the manager's influence (i.e., CEO's share ownership and job tenure) and increases in the constraints on such influence (i.e., the ownership of outside directors, the presence of a venture capitalist, and the reputation of the firm's investment bank at the time of its IPO).

Unlike Lehn et al. (2003) and Boone et al. (2004) that study rather unique samples, Linck et al. (2006) conduct a much more comprehensive study by employing a sample of more than

² In the papers we discussed here, Lehn et al. (2004), Boone et al. (2004) and Linck et al. (2006), both board size and board composition are examined. Our discussions here, however, only highlight their results on board composition since it is the focus of this study.

5,000 publicly-traded US firms from 1990 to 2004. Their results indicate that firm size, CEO power and ownership structure are the economic determinants of board composition.

In brief summary, all these empirical studies discussed above come to the same general conclusion; that is, economic considerations and firm characteristics drive corporate board size and composition, and board structures are endogenously determined in ways consistent with value maximization.

2.4. Ownership variation in the property-liability insurance industry

The range of ownership structures within the insurance industry is perhaps the broadest of any major industry [Mayers and Smith (1988)]. Included are stock companies, which employ the standard corporate form; mutuals and reciprocals, which (like cooperatives) merge customer and ownership functions; and Lloyd's associations, which supply insurance through coalitions of individual underwriters [Mayers and Smith (1994)]. Among common stock companies, ownership also varies greatly. At one extreme, the equity is held by a mutual insurer, and at the other extreme, the equity is held by one individual. A substantial amount of research has been conducted studying various issues related to ownership structure in the insurance industry. Our discussion here is focused primarily on those studies examining the implications of ownership on corporate control.

2.4.1. Mutual versus stock ownership

Stock and mutual insurers are the two most popular ownership structures in the insurance industry. The comparison of mutual versus stock ownership structures has been subject to extensive research in the insurance literature. Prior studies consistently show that mutual and stock ownership forms are inherently different and such differences have profound implications for firms' operation, investment and other decisions [e.g., Mayers and Smith (1988) on insurers'

business choices, Mayers and Smith (1992) on CEO compensation, Lamm-Tennant and Starks (1993) on operational risk characteristics, and Lee, Mayers and Smith (1997) on insurers' risk taking behaviors around the enactment of state guaranty funds].

The difference between mutual and stock companies also has important implications for corporate control. In mutuals, ownership rights are not transferable. This inalienability has important implications for the technology of corporate control. For example, the restrictions on the transferability of ownership claims preclude monitoring by institutional shareholders and other blockholders, managerial equity ownership, stock-based incentive compensation (e.g., stock option awards), as well as hostile takeovers [Mayers et al. (1997)]. The lack of alternative control mechanisms in mutual companies increases the importance of monitoring by outside directors in mutual insurers. Consistent with this hypothesis, Mayers et al. (1997) find that mutual life insurers are associated with a higher fraction of outside directors on their corporate boards than stock life insurers.

Our study extends Mayers et al. (1997) in several ways. First, we control for significant differences between mutual and stock insurers by examining various ownership structures within the population of common stock insurers. By distinguishing among mutual-owned, widely held, closely held by others and closely held by management, we exploit more texture in ownership data than Mayers et al. (1997). Second, our sample covers a large number of mutual and stock property-liability insurers in the past decade, while the sample in Mayers et al. (1997) consists of 120 mutual life insurers and 225 stock life insurers for 1985 only. Therefore, our sample is more representative and general than that of Mayers et al. (1997). Finally, Mayers et al. (1997) focus on life-health insurers, which are significantly different from property-liability insurers in many

aspects. By looking at property-liability insurers, our analysis will serve as the first investigation of board structures in the property-liability insurance industry.

2.4.2. Stock company ownership classes

In addition to the variation between mutual and stock companies, ownership also varies greatly among common stock companies. As discussed earlier, the equity of a stock company can be closely held when it is concentrated in the hands of one or several individuals; it can also be widely dispersed among policyholders of the parent mutual company when it is mutual-owned. Previous studies in the insurance literature investigating such differences among stock company ownership classes include Mayers and Smith (1992), Mayers and Smith (1994), Cummins and Sommer (1996), and Ke, Petroni and Safieddine (1999).

Studying the CEO compensation of 379 life insurance companies, Mayers and Smith (1992) document that CEOs of mutual-owned stock companies are compensated at a lower level than are CEOs of comparable stock company subsidiaries, consistent with their hypothesis that managerial control is more expensive in mutual-owned insurance companies and thus mutual-owned companies are more prevalent in areas where management exercises less discretion. While Mayers and Smith (1992) only compare mutual-owned stock companies with stock-owned stock companies, Mayers and Smith (1994) further distinguish between widely held and closely held, both of which are stock-owned stock companies. They argue that the costs of controlling the owner-manager conflicts are greater in widely held companies than in closely held companies. Therefore, closely held companies have a comparative advantage in activities requiring more managerial discretion. Among closely held stock companies, Cummins and Sommer (1996) further differentiate closely held firms owned by management from closely held firms owned by other parties. They argue that “owner-manager conflicts are expected to be

smallest in closely held firms owned by managers and largest (among stock insurers) in publicly traded firms, with closely held firms owned by other parties providing an intermediate case” (p. 1077), and their results support such hypothesis. Similar to Cummins and Sommer (1996), Ke et al. (1999) focus on the implications of ownership on corporate control and examine whether accounting-based incentive pay contracts are less prevalent in closely held insurance companies than in widely held insurance companies. Their results show that CEO pay is sensitive to firm performance for widely held insurance companies but not for closely held insurance companies, consistent with their hypothesis that closely held insurers should have more direct monitoring of management by owners and thus rely less on costly contracts that link management’s compensation to explicit performance measures. These studies exploring the detailed ownership classes within common stock companies all indicate that these ownership differences have important implications on corporate control.

3. Hypotheses Development

In their seminal paper on *Separation of Ownership and Control*, Fama and Jensen (1983) predict that the separation of ownership and control leads to the decision systems that separate decision management from decision control. They broadly define decision management as the initiation and implementation of decisions, and decision control as the ratification and monitoring of decisions. As the board of directors is the common apex of the decision control system of organizations, their hypothesis implies that the greater the separation of ownership and control, the greater will be the separation of management and the board of directors. A testable implication of Fama and Jensen’s hypothesis, therefore, is that board independence increases in the degree of the separation of ownership and control.

In a mutual insurance company, the ownership resides with policyholders. Unlike in stock companies, where a shareholder can increase his voting rights by holding more shares, each policyholder has one voting right (one voting right per policy) regardless of the magnitude of the policy. In this respect, mutual companies represent the strongest form of diffuse ownership. Residual claimants of mutual companies, one might argue, can withdraw resources by cancelling their policies, and such withdrawal is a form of partial takeover or liquidation which deprives management of control over assets. However, without further action either internally or from the market for takeovers, the assets of mutual companies are left under the control of the managers [Fama and Jensen (1983)]. In addition, the takeover mechanism is weaker in a mutual company since the policyholders would have to remove the existing management through a proxy fight and proxy fights are much more expensive in mutuals than in stock firms [Mayers and Smith (1981) and Mayers and Smith (1986)]. Therefore, mutual companies represent a larger degree of separation of ownership and control than stock companies and thus are expected to employ more outside directors on their board.

While stock companies in general represent less separation of ownership and control than mutual companies, the degree of such separation also varies across stock company ownership classes.

In a stock company closely held by management, where the majority of shares outstanding are in the hands of managers or their family members, the manager and risk bearer function are merged and the wealth consequences of the managers' decisions are internalized. In other words, there is no or little separation of ownership and control and thus the agency costs due to the separation of ownership and control is minimized. Lower agency costs lead to less need for costly monitoring by outside directors, since restriction of residual claims to managers

substitutes for costly control devices to limit the discretion of managers [Fama and Jensen (1983)]. Therefore, stock companies closely held by management are expected to utilize the least proportion of outside directors among all stock companies.

When a stock company is closely held by parties other than management (i.e., closely held by others), the owner and manager functions are not merged as in companies closely held by management. However, the controlling owner(s) will have stronger incentives to more actively monitor managers' decisions and thus exercise more effective control over the company. As Shleifer and Vishny (1997) suggest, when control rights are concentrated in the hands of a small number of investors with a collectively large cash flow stake, concerted action by investors is much easier than when control rights, such as votes, are split among many of them. In particular, the majority shareholder has the incentive to collect information and monitor the management, thereby avoiding the traditional free rider problem faced by investors of widely held firms. The majority shareholder also has enough voting control to put pressure on the management in some cases, or perhaps even to oust the management [Shleifer and Vishny (1986)]. Thus, in a stock company closely held by others, the effective control by the majority shareholder(s) partially offsets the agency conflicts created by the separation of ownership and control. The agency problem between managers and owners, as a result, is higher than that in stock companies closely held by management, but lower than that in stock companies with diffuse ownership. As a result, the utilization of outside directors in stock companies closely held by others is expected to be higher than that in companies closely held by management, but lower than those in widely held stock companies and in mutual-owned stock companies.

In a widely held stock company, the ultimate ownership rests with individual stockholders with no individual or family having majority control. This form of ownership

represents a potentially very high degree of separation of ownership and control. As ownership is dispersed among many investors, these investors themselves are often too small and too poorly informed to exercise even the control rights they actually have. Moreover, the free rider problem faced by individual investors makes them uninterested in expending effort to learn about the firms they have financed, or even to participate in the governance, just as it may not pay citizens to get informed about political candidates [Shleifer and Vishny (1997)]. As a result, the larger degree of separation of ownership and control in widely held companies leads to greater owner-manager conflicts than in closely held companies. Such agency conflicts due to the separation of ownership and control can be partially offset, however, by certain control mechanisms available to widely held companies. By definition, widely held companies do not have a majority-controlling shareholder; however, some degree of ownership concentration (e.g., through institutional shareholders or other block shareholders) is quite common in widely held companies, which improves the control of the management. In fact, Barclay and Holderness (1991) find that large blocks of shares mostly trade at a premium, which, they argue, results from the private benefits of control accruing to the block shareholder. As the presence of some degree of ownership concentration offsets the complete separation of ownership and control in widely held companies, the owner-manager conflicts in widely held companies are expected to be greater than those in closely held companies, but less than those in mutual-owned companies where, as discussed next, the separation of ownership and control is the greatest. Therefore, the utilization of outside directors by widely held stock companies is expected to be more than that in closely held companies, but less than that in mutual-owned companies.

A mutual-owned company, by definition, is a stock company whose ownership rests with a mutual parent, and thus is ultimately owned by the policyholders of the mutual parent. As

Mayers and Smith (1994) suggest, the problems of controlling the managers of a mutual-owned stock are similar to those of mutual companies. Since each policyholder has only one voting right, mutual-owned stock companies represent the most diffuse ownership structure among all stock company ownership classes. The nearly complete separation of ownership and control, in turn, causes the greatest owner-manager conflicts in mutual-owned companies and thus is expected to lead to the most extensive utilization of outside directors on their boards among all stock ownership classes.

To summarize our hypotheses, we expect that agency costs related to owner-manager conflicts increase in the degree of the separation of ownership and control. As a result, the use of outside directors increases when the degree of separation of ownership and control gets larger. Specifically, we expect to observe the following: first, mutual companies employ more outside directors than stock companies; second and more importantly, among all stock companies, those closely held by management employ the lowest proportion of outside directors, followed by those firms closely held by others, those widely held, and finally, mutual-owned stocks, which will utilize outside directors most extensively.

4. Sample Selection

4.1. Data on boards of directors

We collect the information on corporate management and boards from the Best's Insurance Reports Property/Casualty Edition published annually by the A. M. Best Company. Our data covers a ten-year period from 1995 to 2004, with 2004 being the most recent year with data available. As Best's Insurance Reports are published each year around July, management and board information in, say, the 2005 Best's Insurance Report is assumed to reflect the board

information as of December 31, 2004.³ Management and board information of each firm from Best's Insurance Reports is then matched with demographic and financial information collected from the National Association of Insurance Commissioners' Database ("NAIC Database" hereafter).

4.2. Data on firm ownership structure

4.2.1. Mutual versus stock ownership

We obtain the information on whether an insurer is a mutual or a stock firm from NAIC Database which reports each firm's basic ownership structure (i.e., stock, mutual, Lloyd's or insurance exchange). If it is a mutual company, it is included in the sample unless the company converted to a stock company during the sample period (29 mutual companies). If it is a stock company, we include the company for the entire sample period unless it experienced an ownership change (e.g., mergers or acquisitions) during the period. For those companies with one or more ownership changes, we include them in the sample up until the year before the first ownership change occurred. To determine whether a change of ownership occurred to the sample stock firm during the sample period, we turn to A. M. Best Company's Best Insurance Reports ("Best's Reports" hereafter). Starting with all stock insurers reported in the 1995 NAIC Database, we look each company up in the Best Reports 1996 Edition to determine the ultimate owners of each stock insurer. If the ultimate ownership is not clear from Best's, we conduct further investigation in the following sources: LexisNexis Academic Database, Dun & Bradstreet

³ Note that sometimes this is inaccurate since in a few occasions, we do observe officers or directors newly appointed in the early months of a year appearing in that year's Best's Insurance Report edition. However, it is impossible to assert the exact month in which officers and directors come into office because (a) such information is not available in the vast majority cases.

Million Dollar Database and company websites.⁴ If none of these sources provide the information on the insurer's ultimate ownership, we delete it from the sample. Employing this procedure, we are able to determine the ultimate ownership of 1,481 out of the 1,685 stock insurers in the 1995 sample.⁵ For these 1,481 stock insurers, we look up each company in the Best's Insurance Reports 2005 Edition, which reports ownership information as of year end 2004. If the ultimate ownership is the same in 2004 as it was in 1995, then our task to determine the ownership ends there. If the ultimate ownership is different in 2004 from that in 1995, then we track the firm in Best's Insurance Reports 1997 through Best's Insurance Reports 2004 editions to determine when the first ownership change occurred.⁶ Due to the inclusion of lagged board size and growth in direct premiums written (from year t-1 to year t) in the list of independent variables, we further require that all firms in the sample have information available on the board structure and direct premiums written for the previous year. After imposing these restrictions, we obtain 9,855 and 3,098 observations for the sample of mutual and stock companies. These observations correspond to 382 unique mutual insurers and 1,223 unique stock insurers

4.2.2. Stock ownership classes

As indicated earlier, NAIC Database only reports each firm's basic ownership structure (i.e., stock, mutual, Lloyd's or insurance exchange), but provides no information on the detailed ownership of stock insurance companies. As a result, we utilize the information on ultimate ownership that we previously gathered from Best's Reports and classify stock insurers following

⁴ In a number of cases, we also "Google" the company on the Internet and search for news releases regarding mergers or acquisitions of or regulatory actions against a company.

⁵ The proportion of firms whose ultimate ownership cannot be determined is just under 14%, compared to 19% of stock insurers whose ultimate ownership could not be determined in Mayers and Smith (1994).

⁶ Note that the most frequent changes we observe in the sample are due to mergers and acquisitions, followed by regulatory actions such as conservation, liquidation, etc.

the approach suggested by Mayers and Smith (1994). We define ultimate ownership in terms of individuals. For example, if a company is owned by another, we examine the parent to determine the ultimate ownership. If the ownership of its parent rests with stockholders, policyholders of a mutual, or members of an association, that is the end of the process; if the parent, on the other hand, is owned by another company, we examine ownership of the ultimate parent company.

Of the 1,481 stock insurers whose ultimate ownership in 1995 is known to us, 1,329 companies fall into one of four subcategories under investigation. Specifically, we classify 233 stock insurers as closely held, as each insurer's majority ownership rests with one or several individuals, or with a single family. We distinguish between closely held by management and closely held by others. We classify 152 stock insurers as closely held management, as the majority owner(s) or his/her family member(s) is (are) officer(s) of the corporation, and define the remaining 81 closely held insurers as closely held by others. We classify 903 insurer as widely held when a company itself or its ultimate parent is publicly traded and thus the ownership ultimately rests with individual stockholders. Finally, we define 193 stock insurers as mutual owned, since each company's ultimate parent is a mutual insurer.⁷

With those 1,329 stock companies in 1995, three additional restrictions are imposed on the sample. First, similar to our requirements for the overall stock sample, we include the company for the entire sample period unless it experienced an ownership change during the period. For those companies with one or more ownership changes, we include them in the sample up until the year before the first ownership change occurred. Again, due to the inclusion

⁷ The remaining 152 stock insurers are excluded from the sample of the four stock ownership classes as they are firms where the ultimate ownership is held by associations, insurance exchanges, risk retention groups, partnerships, or trusts.

of lagged board size and growth in direct premiums written in the list of independent variables, we further require that all firms in the sample have information available on board structure and direct premiums written for the prior year. Such processes generate 5,697 firm-years for the sample analyzing the four stock ownership classes.⁸ This sample consists of 146 unique mutual owned insurers, 631 unique widely held insurers, 66 unique insurers closely held by others, and 127 unique insurers closely held by management.

5. Empirical model and variables

The empirical model with which we test our hypothesis is as follows:⁹

$$\% \text{ of outside directors} = f(\text{ownership indicator variables} + \text{control variables})$$

5.1. Research design

Our data consist of a cross-section and time series panel. Hermalin and Weisbach (1998) suggest that there will be long-term persistence in firms' governance practices and long-term inter-firm heterogeneity in these practices as well, raising concerns about the independence of the firm-level observations from year to year. In addition, board size and board independence are likely endogenously determined [Linck et al. (2006)]. Following similar approaches employed by Boone et al. (2004) and Linck et al. (2006), we design our research to address such concerns of endogeneity in several ways. First, we estimate robust standard errors incorporating

⁸ The requirement for available information on board structure for prior period leads to the exclusion of data in 1995 for the full sample, since we do not have board structure information for years before 1995.

⁹ Often, when board structure is studied, both board size and board independence are examined. However, here we focus on the association between ownership structure and board independence, because the theory offers clear indications regarding the implications of separation of ownership and control on board composition. In contrast, no existing theory clearly indicates the implications of the separation of ownership and control on board size. For completeness, we do run regressions on board size, and results unreported here indicate that mutual companies have significantly larger boards than stock companies in the property-liability insurance industry, contrary to the findings in Mayers et al. (1997) who show no difference in board size between mutual and stock life insurers. We also find that mutual owned companies have larger boards than stock owned companies. However, board size is not significantly different among stock companies widely held, stock companies closely held by others and stock companies closely held by management.

firm-level clustering for all regressions.¹⁰ This approach is aimed to control for the lack of independence among observations from the same firm from year to year. Second, to control for the interdependence between board composition and board size, we include in the board composition regression lagged board size as an instrument for board size. Third, we include year fixed effects in all our models.

5.2. *Dependent variable and key explanatory variables*

Our main hypothesis is that insurance companies adopt appropriate board composition based on their ownership structures. Therefore, the dependent variable is the fraction of outside directors. We define outside directors as nonofficer, nonfamily directors.¹¹ We define family members as those having the same last name as the firm's officers. The key explanatory variable is the ownership variable. For the analysis comparing mutual and stock companies, the ownership indicator variable is stock (stock company = 1; 0 otherwise), with mutual company being the omitted category. For the major analysis on board composition across stock ownership classes, we employ three indicator variables, mutual owned (mutual owned = 1; 0 otherwise), widely held (widely held = 1; 0 otherwise), and closely held by others (closely held by others = 1; 0 otherwise). The omitted category is closely held by management.

As discussed previously, we hypothesize that use of outside directors on the board increases with the degree of separation of ownership and control. Specifically, we expect that mutual companies are associated with higher fraction of outside directors than stock companies;

¹⁰ We employ the SURVEYREG procedure in SAS to obtain standard errors robust to firm clustering. By design, the procedure allows within-firm correlation across years. PROC SURVEYREG uses the Taylor expansion theory for estimating sampling errors of estimators. For a detailed discussion of this procedure, please see New SAS Procedures for Analysis of Sample Survey Data by Anthony An and Donna Watts, SAS Institute Inc. (http://www.ats.ucla.edu/STAT/sas/library/svy_survey.pdf)

¹¹ The issue of who is an outside director is debatable. For example, is a company's auditor really an outsider? The definition we use is common [e.g., Fama and Jensen (1983), Brickley and James (1987), Mayers et al. (1997), Lehn et al. (2004), and Linck et al. (2006)]. Moreover, our data source, Best's Insurance Reports, does not provide sufficient biographical data to construct more complicated definitions of outsiders.

and among common stock ownership classes, the fraction of outside directors on board increases in the following ranking order: stock insurers closely held by management, stock insurers closely held by others, stock insurers widely held and stock insurers owned by mutuals. Thus, the sign for the stock company indicator is expected to be negative. For the analysis on stock ownership classes, all three indicator variables are expected to have a positive coefficient estimate, and the absolute magnitude of coefficient estimates is expected to be largest for mutual owned, and smallest for closely held by others, with widely held falling somewhere in between.

5.3. *Control variables*

Focusing on publicly traded entities, prior studies [e.g., Boone et al. (2004), Lehn et al. (2004), and Linck et al. (2006)] have identified several firm characteristics that have an impact on board composition. Similar measures of firm characteristics are included in our regressions as control variables. Note that as the vast majority of our sample firms themselves are not publicly traded, the measures we use for our sample firms are similar to but not exactly the same as those used in previous studies of publicly traded companies.

5.3.1. *Firm size*

Boone et al. (2004), Lehn et al. (2004) and Linck et al. (2006) all document a positive relation between firm size and board independence, consistent with the notion that larger firms may have greater agency costs of free cash flow [Jensen (1986)] and that board independence increases in firm size as a means to mitigate the agency problems associated with firm size [Linck et al. (2006)]. However, Linck et al. (2006) also suggest that the relationship between firm size and board independence is nonlinear. Therefore, we include both firm size and a squared term of firm size in the regression. Firm size is defined as the natural log of firm's total admitted assets.

5.3.2. *Firm age*

In addition to firm size, Boone et al. (2004) use firm age as another proxy for the scope and complexity of the firm's operations and expect board independence to increase in firm age. Their results, however, are inconsistent across different model specifications. Linck et al. (2006) suggest a possible nonlinear relationship between firm age and board independence as the firm's complexity may not necessarily increase in firm age once a firm is "mature". Consistent with their hypothesis, they find that board independence increases in firm age but at a decreasing rate. Therefore, we include in the regressions both firm age and a squared term of firm age. Similar to previous studies, we define firm age as the number of years since the firm's inception.

5.3.3. *Firm diversification*

Both Anderson, Bates, Bizjak and Lemmon (2000) and Coles, Daniel and Naveen (2004) argue that diversified firms employ more independent directors to monitor their wide scope of operations. In this respect, more diversified firms are expected to have greater board independence. On the other hand, however, the more diversified a firm's operations are, the greater information asymmetry is present, and the higher the costs of monitoring by outside directors. If this is the case, more diversified firms may require more insiders on the board to help oversee the firm's operations [Boone et al. (2004)] and one may observe a negative relation between firm diversification and board independence. Given these competing hypotheses, the overall impact of diversification on board independence remains an empirical question.

Instead of using the number of a firm's business segments, we employ two measures for business complexity: line of business Herfindahl index and geographic Herfindahl index, two standard measures of diversification in insurance studies [e.g., Mayers and Smith (1994), Carson and Hoyt (1995), Kleffner and Doherty (1996), Pottier and Sommer (1997), Bajtelsmit and

Bouzouita (1998)]. In addition to their wide acceptance in the insurance literature, the Herfindahl indices also provide measures of the firm's diversity in two dimensions – both by line and by state, and thus offer some advantage over the one dimension measure, the number of business segments.

5.3.4. Firm growth opportunities

The expertise brought in by outside directors does not come free. Besides the direct costs such as compensation of directors, costs of monitoring by outside directors also result from transfer of information, which are presumably higher for high growth firms. Outside directors face information acquisition and processing costs in transferring their general expertise to the specific firm on which they serve as board members [Linck et al. (2006)]. High growth firms represent higher degree of information asymmetry and thus have higher costs of obtaining information by the outside directors. In other words, the total costs of monitoring by outside directors are higher for high growth firms than for low growth firms. Adams and Ferreira (2006) and Raheja (2006) both suggest that board independence is decreasing in the costs of monitoring. For this reason, we expect an inverse relation between firm growth opportunities and board independence.

The most commonly used proxy for growth opportunities is the market to book ratio, but its calculation requires stock price data. Since our sample contains a large proportion of mutual and non-publicly traded stock firms, such a proxy is not available for our analysis. However, Baber, Janakiraman and Kang (1996) propose using past growth rates as a proxy for future investment opportunities. For specific studies of insurance companies, Colquitt, Sommer and Godwin (1999) use the average over the prior three years of growth in direct premiums written as one of the proxies for investment opportunities. We use the growth in direct premiums written

from year t-1 to year t as a proxy for a firm's growth opportunities. We recognize that our proxy may not be as good as these commonly used measures of growth in studies on publicly traded entities. Still, we hope that our proxy will help capture part of, if not all of, the information asymmetry associated with firm growth.

5.3.5. Fraction of business from long tail lines

To proxy for the risk embedded in a firm's operations, we also include the fraction of business from long tail lines as an additional control variable. The higher fraction of business in long tail lines, the more fluctuating its performance is likely to be. In this respect, this measure serves as an additional proxy for information asymmetry. If this is the case, we would expect an inverse relation between board independence and fraction of business in long tail lines. On the other hand, however, this variable may also serve as a proxy for managerial discretion. The more a firm is engaged in long tail lines, the higher managerial discretion its management has and the greater need for monitoring by outside directors. In that case, one would expect to observe a positive relation between the percentage of business from long tail lines and the fraction of outside directors, all else equal. Overall, the expected sign of this variable is ambiguous and remains an empirical question.

5.3.6. Firm performance

Hermalin and Weisbach (1998) suggest that firms add outsiders to the board following poor performance. Consistent with such hypothesis, Linck et al. (2006) find an inverse relation between firm performance and board independence. To control for the possible impact of firm performance on board independence, we include the average annual industry-adjusted return on assets over year t and year t-1 and expect to observe a negative coefficient estimate on this variable.

5.3.7. *No. of affiliates*

As group affiliations are very common in the property-liability insurance industry, we include in the regression an additional control variable, “No. of Affiliates”, which is the number of affiliated companies in the same group as the firm. Fama and Jensen (1983) argue that less formal mutual monitoring among agents (managers) serves as an additional internal control mechanism that buttresses the formal monitoring by the board of directors and higher level agents. The larger the number of affiliates within the same group, the more potential mutual monitoring among top managers of affiliated companies and thus the less need for costly monitoring by the outside directors. If that is the case, one may expect to observe a negative relation between the number of affiliates and the fraction of outside directors.

5.3.8. *Board size*

Linck et al. (2006) show that board composition is affected by board size. In particular, they find that board independence increases in board size. To control for the impact of board size, we include board size in the regression as an additional control variable. As discussed previously, lagged board size is used as an instrument to control for the interdependence between board composition and board size in the same period. For the reduced sample including only observations from every third year, board size is the value from three years earlier.

5.3.9. *Year effects*

For the full sample analysis, we also include year dummies for years 1997 to 2004, with 1996 as the omitted year. For the reduced sample with every third year (i.e., years 1998, 2001 and 2004), we include two year dummies for years 2001 and 2004, with year 1998 being the omitted year. We do not offer any predictions on these year dummies.

5.4. *Descriptive statistics*

[Insert Table 1 Here]

Table 1 reports the summary statistics for all mutual and stock companies. Table 2 reports board characteristics for both mutual and stock insurers as well as for the four stock ownership classes. Panel A of Table 2 indicates that the mean (median) number of directors is 10.1 (9) for mutual companies and 8.0 (7) for stock companies. Both t-test and median-test p -values are less than 0.0001, rejecting the equality of mean as well as median board size between mutual and stock companies. Moreover, the mean (median) fraction of outside directors is 0.73 (0.78) for mutual companies and 0.51 (0.56) for stock companies. The means and medians are significantly different (t-test and median-test p -values are less than 0.0001). While 52% of stock insurers have outsider-majority boards, 87% of mutual insurers have their boards dominated by outsiders.

For comparison, we look at the board characteristics reported in Mayers et al. (1997). While the mean (median) board size is 12.2 (12) for their mutual life insurers and 8.3 (7) for their stock life insurers, the mean (median) fraction of outside directors is 0.72 (0.78) for their mutual life insurers and 0.44 (0.44) for their stock life insurers. Without statistical testing, we can only conclude that their sample mutual insurers appear to have larger boards than our mutual sample firms, while their stock sample firms seem to have lower fraction of outside directors than our stock sample firms.

Panel B of Table 2 summarizes board characteristics across the four stock ownership classes. The fraction of outside directors is highest among mutual-owned stock insurers, followed by widely held, closely held by others, and closely held by management, consistent

with our predictions. Both Wilcoxon Two-Sample tests and Kruskal-Wallis tests are performed to compare each two of the subcategories. The test statistics are highly significant (with p -values < 0.05), rejecting the null hypotheses that any two subcategories have the same distribution of board composition.

[Insert Table 2 Here]

6. Empirical results

Correlation of variables is examined and Pearson Correlation Coefficients are reported in Table 3. No serious correlation is detected among the independent variables, reducing the potential concern of multicollinearity.

[Insert Table 3 Here]

The initial regression analysis includes only one ownership variable, indicating whether a firm is a stock company or a mutual company. Results for this regression are reported in Table 4. As expected, stock companies are associated with a lower fraction of outside directors than mutual insurers, consistent with previous findings in Mayers et al. (1997). Board size in the previous period is positively related to board independence, indicating that large boards tend to have more outside directors, consistent with Boone et al. (2004) and Linck et al. (2006). As anticipated, the relation between board independence and firm size is non-linear: board independence increases in firm size but at a decreasing rate, consistent with previous findings. In addition, companies associated with larger groups have lower fraction of outside directors on their boards, consistent with our prediction that mutual monitoring among colleagues may substitute to some extent for the formal monitoring by outside directors.

[Insert Table 4 Here]

As indicated earlier, this study is focused on how the variation of ownership among stock ownership classes affects board composition. Table 5 reports the results from this part of the analysis. As expected, all three classes of stock companies employ significantly higher fraction of outside directors than stock insurers closely held by management. The magnitude of the coefficient estimates is also consistent with our predictions: largest for mutual owned insurers and smallest for insurers closely held by others, with the coefficient estimate for insurers widely held falling in between. Additional tests indicate that all three of the coefficient estimates are significantly different from each other (p -values are all less than 0.001). Overall, the results are consistent with our hypotheses: the use of outside directors is increasing as the degree of separation of ownership and control increases along the continuum of ownership structures from closely held by management, to closely held by others, to widely held, and to mutual owned.

Similar to the findings in Table 4, board independence increases in firm size but at a decreasing rate, consistent with the notion that the impact of firm size on board composition is non-linear. Both Line of Business Herfindahl and Geographic Herfindahl are positively associated with board independence, indicating that the more diversified a firm is, the fewer outside directors will be on its board. This is consistent with Boone et al's (2004) argument that more diversified firms may require more insiders on the board to help oversee the firm's operations, due to the higher degree of information asymmetry and thus higher costs of monitoring by outside directors in more diversified firms.

[Insert Table 5 Here]

7. Conclusions and Discussion

How to construct the corporate governance systems to control the agency conflicts caused by the separation of ownership and control has long been subject to extensive academic research. Existing literature on the implications of the separation of ownership and control on corporate governance, however, has focused on publicly traded companies whose ownership is generally widely diffused among individual investors and thus represent very substantial separation of ownership and control. While publicly traded companies might be the most prominent organizational form, they are only part of the whole spectrum of ownership structures present in corporate America. The spectrum of ownership structures includes mutual companies as well as companies that are closely held. Up to date, little is known about the impact of these alternative ownership structures on firms' governance systems. The main reason for such lack of research is the difficulty in obtaining data on governance systems for companies that are not publicly traded.

Rich variation in ownership structure within the US property-liability insurance industry affords an excellent opportunity to test the implications for corporate governance of the separation of ownership and control. Not only do mutual and stock companies coexist in this industry, but ownership varies widely among stock ownership classes. We focus on the board of directors, arguably the most important corporate governance mechanism within a firm, and empirically examine the implications of the separation of ownership and control on board composition.

Mutual insurance companies, in general, represent greater separation of ownership and control than stock companies, implying greater agency costs between managers and owners. Among common stock ownership classes – mutual-owned, widely held, closely held by others, and closely held by management – the degree of the separation of ownership and control also varies. At one extreme, the ownership of mutual-owned stock insurers is widely vested with

each policyholder of the mutual parents and thus represents the largest separation of ownership and control among all stock companies; at the other end of the spectrum are firms which have the majority of shares outstanding held by their management, implying the least separation of ownership and control among all stock companies. The greater the separation of ownership and control, the higher the costs of agency problems between managers and owners, and the greater the need for monitoring by outside directors.

With a large sample of property-liability insurance companies, we empirically test this hypothesis on the relation between board composition and separation of ownership and control. Our results lend strong support to our hypothesis. Specifically, the results show that mutual companies are associated with higher fraction of outside directors than stock companies in general. Moreover, among the four stock ownership classes under investigation, mutual-owned stock insurers tend to employ the most independent boards, followed by widely held insurers and then those closely held by others, with stock insurers closely held by management being associated with the least independent boards.

Overall, the findings indicate that insurance companies structure their boards in accordance with their ownership structures in ways that are consistent with an attempt to minimize the costs associated with the separation of ownership and control. Our results reinforce the views presented in Boone et al. (2004), Lehn et al. (2004), and Linck et al. (2006) that firms have generally adopted the governance practices most suitable for their organizational forms and economic environment. Therefore, any proposed adoption of uniform mandatory changes in corporate governance, as opposed to voluntary evolutionary changes, should be viewed critically prior to the formulation of public policy.

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Table 1: Descriptive Statistics for Sample Firms

This table reports the summary statistics for all mutual and stock insurers in our sample. We obtain firms' demographic and financial information from National Association of Insurance Commissioners' Database ("NAIC" database). Assets are total admitted assets. No. of affiliates in the sample group is the number of affiliated companies with the same group code as the company. Growth in direct premiums written is the growth rate in direct premiums written calculated as follows: $(DPW_t - DPW_{t-1})/DPW_{t-1}$. Firm performance is the average annual industry adjusted return on assets over year t and year t-1. Line of business Herfindahl is the Herfindahl index calculated based on direct premiums written from all lines. Geographic Herfindahl is the Herfindahl index calculated based on director premiums written from all states. % of business from long tail lines is total direct premiums written from long tail lines divided to total direct premiums in all lines. Firm age is the number of years since the firm starts its operation.

Firm Characteristics of All Sample Mutual and Stock Insurers	N	Mean	Median
Assets (in \$Million)	9,855	634	75
Direct premiums written (in \$Million)	9,855	208	37
Net premiums written (in \$Million)	9,855	207	27
No. of affiliates in the same group	9,855	8	2
Growth in Direct Premiums Written	9,855	0.23	0.06
Firm performance	9,855	0.002	-0.001
Line of business Herfindahl	9,855	0.47	0.40
Geographic Herfindahl	9,855	0.56	0.53
% of business from long tail lines	9,855	0.24	0.05
Firm age	9,855	47	30

Table 2: Board Characteristics

This table reports summary statistics for board characteristics for our sample firms. In Panel A, we report the board characteristics for all mutual and stock sample firms. In Panel B, we report the board characteristics for the four stock ownership classes under investigation. Board size is the total number of directors on a firm's board. Outside directors are directors that do not fall into either of the following categories: officers of the firm or their family members, and officers of any other firm in the same insurance group. Outsider-dominated boards are boards whose proportion of outside directors is more than 50%.

<i>Panel A - All Mutual and Stock Sample Firms (1995-2004)</i>						
Variable	Mutual			Stock		
	N	Mean	Median	N	Mean	Median
Board size	3,216	10.08	9.00	8,376	8.04	7.00
% of outside directors	3,216	0.73	0.78	8,376	0.51	0.56
% of firms with outsider-dominated boards	3,216	0.87	1.00	8,376	0.52	1.00

Panel B - Four Stock Ownership Classes (1995-2004)

Variable	Mutual Owned			Widely Held			Closely Held by Others			Closely Held by Management		
	N	Mean	Median	N	Mean	Median	N	Mean	Median	N	Mean	Median
Board size	1,091	9.48	9.00	4,296	7.78	7.00	457	6.87	6.00	933	6.32	6.00
% of outside directors	1,091	0.63	0.70	4,296	0.49	0.50	457	0.47	0.50	933	0.34	0.33
% of firms with outsider-dominated boards	1,091	0.72	1.00	4,296	0.49	0.00	457	0.40	0.00	933	0.27	0.00

Table 3: Correlation of Variables for the Sample of Mutual and Stock Companies

Pearson Correlation Coefficients (<i>p</i>- value in parenthesis), N = 9,855										
	Board Independence	Mutual Indicator	Board Size	Firm Size	No. of Affiliates	Line of Business Herfindahl	Geographic Herfindahl	% of Business from Long Tail Lines	Firm Age	Performance
Board Independence	1									
Mutual Indicator	0.44 <.0001	1								
Board Size	0.49 <.0001	0.26 <.0001	1							
Firm Size	-0.06 <.0001	-0.16 <.0001	0.21 <.0001	1						
No. of Affiliates	-0.40 <.0001	-0.35 <.0001	-0.12 <.0001	0.34 <.0001	1					
Line of Business Herfindahl	0.02 0.103	-0.11 <.0001	-0.06 <.0001	-0.23 <.0001	-0.15 <.0001	1				
Geographic Herfindahl	0.21 <.0001	0.29 <.0001	0.06 <.0001	-0.52 <.0001	-0.31 <.0001	0.18 <.0001	1			
% of Business from Long Tail Lines	0.04 0.0006	-0.10 <.0001	0.11 <.0001	0.17 <.0001	0.03 0.009	0.26 <.0001	-0.13 <.0001	1		
Firm Age	0.20 <.0001	0.58 <.0001	0.11 <.0001	0.02 0.026	-0.10 <.0001	-0.33 <.0001	-0.04 <.0001	-0.24 <.0001	1	
Performance	-0.01 0.541	-0.03 0.019	0.004 0.701	0.08 <.0001	-0.01 0.612	0.16 <.0001	0.01 0.346	-0.02 0.082	-0.10 <.0001	1
Growth in Direct Premiums Written	-0.02 0.063	-0.08 <.0001	-0.0043 0.697	-0.02 0.089	0.03 0.010	0.05 <.0001	-0.01 0.432	0.02 0.102	-0.09 <.0001	0.01 0.483

Table 4: Board Independence of Mutual vs. Stock Companies

Variable	Estimates (<i>p-values</i>)
Intercept	-1.83 (<i><.0001</i>)
stock (= 1 if a stock)	-0.15 (<i><.0001</i>)
Lagged Board Size	0.03 (<i><.0001</i>)
Firm Size	0.25 (<i><.0001</i>)
Firm Size Square	-0.01 (<i><.0001</i>)
No. of Affiliates	-0.002 (<i>.002</i>)
Growth in Direct Premiums Written	0.01 (<i>.239</i>)
Firm Performance	-0.02 (<i>.813</i>)
Line of Business Herfindahl	0.0004 (<i>.989</i>)
Geographic Herfindahl	0.02 (<i>.309</i>)
% of Business from Longtail Lines	0.02 (<i>.324</i>)
Firm Age	-0.001 (<i>.311</i>)
Firm Age Square	0.000004 (<i>.215</i>)
Year Effects	Yes
No. of Observations	9,855
Adjusted R-Square	0.30

Standard errors are computed using robust methods in which observations are clustered by firm.

Table 5: Board Independence across the Four Stock Ownership Classes

Variable	Estimates (<i>p-values</i>)
Intercept	-2.03 (0.002)
Mutual Owned (β_1)	0.20 ($<.0001$)
Widely Held (β_2)	0.15 ($<.0001$)
Closely Held by Others (β_3)	0.10 (0.004)
Lagged Board Size	0.03 ($<.0001$)
Firm Size	0.23 (.001)
Firm Size * Firm Size	-0.01 (.001)
No. of Affiliates	-0.001 (.142)
Growth in Direct Premiums Written	0.01 (.489)
Performance	-0.03 (.776)
Line of Business Herfindahl	0.07 (.036)
Geographic Herfindahl	0.05 (.025)
% of Business from Longtail Lines	-0.04 (.119)
Firm Age	-0.001 (.509)
Firm Age * Firm Age	-0.0000001 (.991)
F Statistic Testing $\beta_1 = \beta_2$	21.69 ($<.0001$)
F Statistic Testing $\beta_1 = \beta_3$	47.56 ($<.0001$)
F Statistic Testing $\beta_2 = \beta_3$	16.07 ($<.0001$)
Year Effects	Yes 5697
Adjusted R-Square	0.22

Standard errors are computed using robust methods in which observations are clustered by firm.