

**ORGANIZATIONAL FORM, OWNERSHIP STRUCTURE AND TOP
EXECUTIVE TURNOVER: EVIDENCE IN THE PROPERTY-LIABILITY
INSURANCE INDUSTRY**

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ABSTRACT

I investigate the role of organizational form and ownership structure in corporate governance by examining CEO turnover decision in the property-casualty insurance industry. The likelihoods of turnover and non-routine turnover are significantly and negatively associated to firm performance, and the outside succession dominates when non-routine turnover occurs. Further, the firm's magnitude of turnover-performance sensitivity depends on its quality of the corporate governance mechanisms which are determined by organizational form and ownership structure. The sensitivity of non-routine turnover to firm performance is lower in mutuals than publicly held non-family firms. Non-family-member CEOs in publicly listed family firms have the highest likelihoods of turnover and performance-turnover sensitivity among all types of companies. Manager-owned stock insurance companies have the lowest turnover rate and sensitivity of non-routine turnover to firm performance. Also incoming successors mainly come from the controlling family no matter what the turnover type is.

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CHAPTER 1

INTRODUCTION

A firm's corporate governance mechanisms play an important role in disciplining poorly performing CEOs. Thus, CEO turnover decisions provide a good setting for testing the quality of corporate governance mechanisms within a firm (Kang and Shivdasani, 1995; Volpin, 2002). A large body of literature studies the quality of corporate governance mechanisms by examining CEO turnover in publicly listed companies. For example, Weisbach (1988) and Borokhovich, Parrino, and Trapani (1996) study the impact of board composition on the patterns of CEO turnover. Weisbach (1988) finds that an outsider-dominated board increases both the likelihood of CEO turnover and the sensitivity of CEO turnover to performance. Borokhovich, Parrino, and Trapani (1996) provide evidence that firms with a higher fraction of outside directors on the board are more likely to have outside replacement when CEO turnover occurs. Denis, Denis and Sarin (1997) argue that managerial ownership is another determinant of CEO turnover decisions. They find that CEO turnover is less sensitive to firm performance when the management owns more shareholdings of the firm.

The relationship between corporate governance mechanisms and CEO turnover in publicly listed stock firms has received considerable attention in the finance literature. However, we know very little about CEO turnover patterns and their association with firm performance within firms with organizational forms and ownership structures other than publicly listed stocks. In particular, how organizational forms and ownership structures affect the quality of corporate governance and CEO turnover is not well understood. Nagar, Petroni and Wolfenzon (2009) point out that among seven million

corporate tax filers in the latest Census, only about 8,000 are publicly listed firms. Because of the significance of non-publicly listed corporations in US economy, understanding the CEO turnover patterns within these firms would appear to be an important issue for investigation.

This paper studies the determinants of CEO turnover decisions in US property-casualty insurance companies, by focusing on how insurers' organizational forms and ownership structures affect the quality of corporate governance mechanisms within a firm. Mayers and Smith (1988, 1996, 2002) indicate that there is a broad range of organizational forms in insurance industry, such as stocks, mutuals, and reciprocals. Moreover, stock insurance companies have a full spectrum of ownership structures. They can be classified as publicly listed or closely held according to whether or not their shares can be traded in the capital market. Both publicly listed and closely held stock companies can be further categorized as family firms or non-family firms, according to whether there is the presence of a controlling family within the firm.¹ Further, reciprocals and insurers owned by companies in other industry provide an additional opportunity to study the effect of corporate governance mechanisms on CEO turnover decisions.² This key distinguishing feature of the insurance industry enables us to study the impact of organizational forms and ownership structures on CEO turnover decisions. More specifically, I am interested in how CEOs are replaced and what the sources of new CEOs in insurance companies are as well as when a CEO turnover decision is made.

¹ There are some mutuals and reciprocals which are controlled by families. 52 mutuals and 6 reciprocals are known to be family-controlled and we do not specifically study this type of ownership structure due to their relative small proportion in the sample. .

² I acknowledge that other organizational forms and ownership structures besides those studied in this paper exist in the insurance industry, such as Lloyds and risk retention group. I do not include them due to their relative small proportion in the property liability insurance industry. I also exclude the US subsidiaries of foreign insurers since the difficulties to distinguish routine and non-routine turnover.

This analysis is based on a large data set, which covers 748 insurance companies in property-casualty insurance industry over the period 1993-2006 and contains information on insurers' organizational form, ownership structure, and management and financial information. I hand collect CEO turnover and other corporate governance information from Best's Insurance Reports. This information is crosschecked with NAIC annual statement database and supplemented with proxy statements for publicly listed insurers. Financial data is mainly collected from the NAIC annual statement database. I first conduct logistic estimation of CEO turnover decision. Then multinomial logistic regression models are estimated to study the turnover outcomes: routine versus non-routine turnover. Estimations are conducted on insurer subsamples with various organizational form and ownership structure. Finally, I estimate bivariate probit model to capture the CEO succession choice: inside versus outside succession. Overall, my findings suggest that the likelihood of CEO turnover, especially non-routine turnover, is inversely related to firm performance in the insurance industry. The likelihood of outside succession is higher when non-routine turnover occurs. Moreover, the magnitude of this association varies depending on the insurers' organizational forms and ownership structures.

The coexistence of different organizational forms in the insurance industry has attracted a rich stream of literature. Most prior studies focus on the generally stock and mutual firms, including search costs (Dahlby and West 1986), slow diffusion of information in insurance markets, and private information (D'Arcy and Doherty, 1991), relative efficiencies (Cummins, Weiss and Zi, 1999), and comparative advantages in corporate governance mechanism (Mayers, Shivdasani, and Smith, 1997). This study

extends this prior insurance literature in two dimensions. First, I study not only stocks and mutuals, but also reciprocals and insurers owned by a firm not in the insurance industry. I also further classify stocks into publicly listed and closely held firms. The cases of family controlled and non-family controlled stock firms are also discussed. Second, I provide evidence of the effect of corporate governance mechanisms on CEO turnover decisions under aforementioned corporate organizational forms and ownership structures.

This study contributes to the literature in finding that the patterns of CEO turnover and succession vary in different type of insurance organizational forms, partly due to their comparative advantages of corporate governance mechanisms. Compared to stocks, mutuals and reciprocals have lower likelihoods of turnover and the successors are mostly from inside the company, no matter what the type of turnover is. This result holds even after I control the board size and board independence variables. I find that neither board size nor board independence significantly affects CEO turnover decision in mutuals. This result suggests that the higher fraction of outside members on the board cannot fully compensate the lack of monitoring from the capital market and threat from takeover market in mutuals, although Mayers, Shivdasani, and Smith (1997) argue that mutuals improve their weakness of corporate governance due to the inalienability of ownership by employing more outside directors.

I also find that when firm performance is below the industry level, the likelihood of non-routine turnover is higher in publicly listed than that in closely held companies, for both family firms and non-family firms. This result indicates that capital market is more effective in monitoring managers than the close watch from only a small number of

shareholders in closely held companies.

Finally, whether there is a controlling shareholder matters in the CEO turnover decision in insurers. First, controlling shareholders in stock insurance companies are entrenched, and this is even more severe in closely held than publicly listed insurance company. The probability of CEO turnover and its sensitivity to firm performance are the lowest for family-member CEOs in family firms and the new CEOs are mostly from the controlling family for these firms even when non-routine turnover occurs. Second, non-family-member CEOs of publicly listed family firms have the highest likelihood of turnover and strongest sensitivity of CEO turnover to firm performance. This result suggests that monitoring from both capital market and controlling shareholder (holding family) plays an important role to improve the quality of a firm's corporate governance mechanisms. It also suggests that controlling shareholders can be an effective corporate governance mechanism when their interests are more aligned with those of minority shareholders, even though controlling shareholders have incentives to expropriate minority shareholders.

In the next chapter, I will discuss the relevant literature. Chapter 3 motivates and develops the hypotheses based on prior literature. Chapter 4 describes the dataset and methodology. Chapter 5 provides the results and discussion. The conclusion is in Chapter 6.

CHAPTER 2

LITERATURE REVIEW

In this literature review, organizational forms and ownership structures in the insurance industry will be introduced. Their comparative advantages of corporate governance mechanisms will be discussed in detail. Following this will be a review of extant literature about CEO turnover and succession in publicly-listed companies. Finally, the objectives of this study will be presented.

2.1 Organizational Forms and Ownership Structures in Insurance

As Mayers and Smith (1988, 1996, 2002) point out, a wider variety of organizational forms and ownership structures coexist in insurance than in other major industries. Stocks, mutuals and reciprocals are the three main organizational forms in this industry. Moreover, there is a spectrum of ownership structures in stock insurance companies depending on the liquidity of ownership and the presence of controlling shareholders.

Fama and Jensen (1983) argue that the specific characteristics of the residual claims in each organizational form and ownership structure lead to efficient approaches to control agency costs between residual claimants and decision agents.³ According to Mayers and Smith (1988, 1994, 2002), there are three important functions within an insurer: the manager function, the owner/risk-bearer function and the customer/policyholder function. The agency costs in an insurance organization are mainly from the interest conflicts among these three functions. When the roles of owner and manager are separated, a potential incentive problem is created since managers do not

³ Fama and Jensen (1983) define a residual claimant is the one who bears the residual risk-“the risk of the difference between stochastic inflows of resources and promised payments to agents”.

bear the major share of wealth effect of their actions, and generally have interests different from those of owners. The owner-policyholder agency problems are similar to those of shareholders and bondholders. The owners of the firm and/or their agents (managers) have incentives to pursue their own interests at the expense of policyholders after insurance policies are sold. Thus, alternative organizational forms and ownership structures control the agency costs by combining these functions in different ways. Stocks allow the complete separation of these functions to gain the advantages of specialization of each function. Mutuals and reciprocals merger the policyholder and owner functions to resolve their interest conflicts.

It is noteworthy that the agency theoretic arguments are only one of several theories about the existence of mutuals. Alternative theory exists to explain the coexistence of mutuals and stocks in insurance. Smith and Stutzer (1990) argue that the adverse selection induces insureds with low loss probabilities signal their type by purchasing participating policies and sharing aggregate uncertainty of risks, mainly with mutual insurers. Smith and Stutzer (1995) further suggest that mutuals are a more efficient organizational form than stocks, in the presence of aggregate uncertainties and moral hazard. Information asymmetries between owners, managers, and customers contribute to the significant market share of mutuals in the insurance industry. Ligon and Thistle (2005) suggest that small mutuals may provide advantages over stocks in addressing problems of adverse selection and be preferred by low-risk customers.

Another explanation for the coexistence of mutuals and stocks argue that mutuals are likely to be inefficient but to survive due to the regulatory protection (O'Hara, 1981). However, more recent literature indicates that various organizational forms have their

own comparative advantages in different lines of business. For example, studying the effects of organizational structures on efficiency, Cummins, Weiss and Zi (1999) and Cummins, Rubio-Misas, and Zi (2004) found that stocks and mutuals are operating on separate production and cost frontiers and thus represent distinct technologies.

Except for the common stock insurance companies which are wholly owned by their managers, managers do not bear the full wealth effect of their decisions and actions. Thus, the owner-manager incentive conflicts are created in those later firms. Different organizational forms and ownership structures have comparative advantages in some important corporate control mechanisms to mitigate the interest conflicts between owner and manager, which will be discussed in the following subsections.

Publicly Listed Stocks versus Mutuals: For publicly listed insurance companies, the stock market, the market of takeover and expert boards are effective corporate governance mechanisms because of the traded shares and the separation of ownership from the decision process (Fama and Jensen, 1983; Agrawal and Knoeber, 1996). The traded shares also make the effective monitoring on managers feasible by stock analysts, institutional investors and other large blockholders in the capital market (Mayers and Smith, 2002).

Within an insurance company with mutual ownership, the policyholders are both customers and owners and their ownership rights are inalienable. The major benefit of the mutual organizational form is the control of the customer-owner interest conflicts by combining the two functions on the policyholders. However, some effective corporate control mechanisms for publicly listed stock companies are not available in mutuals since the ownership rights of mutuals are inalienable (Mayer and Smith, 1998, 2002). For

example, without traded shares, it is not possible to form a capital market for mutuals, and their managers are not subject to monitoring by stock analyst, institutional investors and blockholders. The inability to transfer ownership rights freely in mutuals also makes takeover activity for mutuals costly and ineffective. Jensen (1993) suggests that encouraging outside board members to hold substantial equity interests would provide better incentives since their decision affects their own wealth as well as that of remote shareholders. However, it is impossible to give equity ownership interests to outside directors of mutuals because of the inalienability of ownership rights in mutuals (Mayers and Smith, 2005).⁴ The inalienability of ownership rights also makes it so that no individual policyholder can concentrate ownership of mutuals by purchasing the diffused shares (Ramusen, 1988). The limited number and geographic dispersion of ownership also gives policyholders little incentive to monitor managers in mutuals (O'Hara, 1981; and Hansmann, 1985). The limited policyholders' incentive to monitor managers is further exacerbated by the existence of the guarantee fund systems, which greatly limits, if not fully eliminates, policyholders' losses from firm bankruptcy (Esty, 1997; and Mayers, Smith, and Lee, 1997). Finally, the costs of withdrawing ownership in mutuals are higher than in stocks because the ownership is resided on the insurance policies.⁵ This incapability to transfer ownership of mutuals limits the ability of owners to "vote with their feet".

Although mutuals have higher degree of owner-manager incentive conflicts, previous

⁴ Although in practice, both managers and outside board members can be compensated for good firm performance in the form of bonus in mutuals, they cannot enjoy the possible significant wealth effects associated with the increase in the value of equity ownership as those in publicly listed stocks.

⁵ Fama and Jensen (1983b) suggest that the policyholders can surrender an insurance policy, which is a form of partial takeover or liquidation and deprives manager control of assets. However, there are two main costs faced by them: the first one is the surrender charge and the other one is the availability of new policy. These higher costs of transferring control for mutual insurance policyholders make the monitoring of the manager much less effective, if not impossible at all.

studies have reported evidence that insurance companies with mutual organizational forms have some specific features to control this problem. Mayers, Shivdasani, Smith (1997) argue that a stronger internal control system can compensate the lack of external corporate control mechanisms which is caused by the inalienability of mutual ownership. They report the evidence that mutuals have significantly larger fraction of outside directors on the board than stocks, and there is a significant increase in the employment of outside directors when an insurer switches from stock to mutual ownership. In addition to enhancing its internal monitoring system, the other way to control the managerial discretion in mutuals is restricting the business of mutuals to simple and geographically concentrated lines. Mayer and Smith (1988) examine whether alternative organizational forms affect the activity choices of property-casualty insurer. They argue that mutual insurers operate more in business lines of insurance that require managers exercising less discretion in setting rates. Their finding suggests that mutuals have a higher degree of geographic concentration than stocks, and mutual and stock insurance companies tend to have business concentration in different lines of insurance. Lamm-Tennant and Starks (1993) provide further evidence to support this argument. They compare activity choices of mutuals and stocks by examining panel data and their results indicate that stocks write more business in lines with higher underwriting risk than mutuals. Overall, the attempts of mutual insurers to control managerial entrenchment problems produced by higher managerial discretion include: geographic concentration, concentration of line of business in simple insurance and higher fraction of outside directors on the board. Among these ways to control managerial discretion problem, only a higher fraction of outside board members attempts to control this

problem through influencing the quality of internal control systems of mutuals.

Although compared with stocks, mutuals have stronger internal control systems to control managerial discretion problem, there is still no direct evidence about how this remedy improves the corporate governance quality in mutual insurance companies. Mayers, Shivsadani and Smith (1997) find the evidence that among mutuals, operational costs tend to be lower when there are more outside members on the board. However, Spiller (1972) argues that management in a mutual insurance company expropriates the firm's other claim holders to gain personally. Thus, there is no explicit answer to the comparison in effectiveness of corporate governance mechanisms in disciplining managers between mutuals and stocks.⁶

Closely Held Stocks versus Publicly Listed Stocks: When a common stock insurance company is closely held, the monitoring from the owners on managers is direct and simple (Fama and Jensen, 1983). Fama and Jensen (1983) argue that the most effective way to control the costs raised by separating owner and manager in the closely held stock company is restricting the ownership to managers. Nagar, Petroni, and Wolfenzon (2009) indicate that a key feature of closely held firms is that shareholders are typically few in number, and they are also familiar and involved in management. Mayers and Smith (1994) find that the costs of controlling the owner–manager conflicts are greater in widely held companies than in closely held companies. Even in the case that the ownership is not restricted to managers, those with special relations with managers may own the closely held corporation to control the agency problems efficiently, such as

⁶ I classified mutual owned stock firms as mutual firms in our study because I classify a firm according to its ultimate organizational form and ownership structure. If a firm belongs to an insurance group, only group information counts.

controlling family or business associates.⁷

Family Controlled Firms versus Non-Family Controlled Firms: Another important type of common stock companies in the insurance industry is family firm, which can be either closely held or publicly listed.⁸ The block ownership held by the controlling family has different implications to the corporate governance within family firms. Because the firm performance has substantial wealth effects on the controlling family, the controlling family is more likely to be an active shareholder compared to other types of large shareholders, such as institutional shareholders.⁹ The dominant ownership of the controlling family can effectively mitigate the owner-manager interest conflicts, either by monitoring a non-family-member CEO closely or appointing a family member to the CEO position. The controlling families have the ability and incentive to monitor a non-family-member manager due to their block shareholdings and the linkage of firm performance and family wealth. The controlling family also has more incentives to invest long-term human capital within the firm. Appointing a family member to the CEO position can also effectively mitigate the agency problems between owner and manager by combining ownership and management. However, a new agency problem between majority and minority shareholders is created (Sheleifer and Vishny, 1986). This problem may be even more severe in family firms since past literature indicates that

⁷ In the property-casualty insurance industry, association owned firm is one of the main types of closely-held common stock companies.

⁸ There are some mutuals and reciprocals that are controlled by families. The most popular form for family-controlled mutuals is that the controlling family of a mutual insurance company is the founding family. I define a mutual insurer as family-controlled if AM Best annual report indicates it explicitly or more than one family member from a family present on the board. I find 52 family controlled mutuals and 6 reciprocals with family-controlled attorney-in-fact. Due to their limited number, we do not separate them from general mutual firms and reciprocals.

⁹ Institutional owners might be active or passive monitoring shareholders depending on their characteristics. Numerous papers study the type of institutional owners. See for example, Bushee (1998), Chen, Harford and Li (2007) and Elyasiani and Jia (2008).

many effective corporate control mechanisms do not function well for family firms. For example, family firms have lower takeover possibility, which has been shown to be influential on the internal control process (Morck, Sheleifer, and Vishny, 1988; Mikkelson and Partch, 1989; Shivdasani, 1993; and Song and Walkling, 1993).

Reciprocals versus Mutuals: Reciprocals, similar to mutuals, join the policyholder and owner functions into the subscribers who are the members in the association. In reciprocals, the subscribers exchange insurance contracts among themselves through an Attorney-in-Fact to share or spread their risk.¹⁰ As suggested by Fama and Jensen (1983), reciprocals, similar to other organizational forms in which the residual claimants and decision agents are separated and the decision agents do not bear the major share of the wealth effect of their decisions, have separated management and control of decision. The decision control in the reciprocal is designated to Board of Governors that is voted by the subscribers.¹¹ The responsibilities of a Board of Governors typically include general oversight of the reciprocal, selection of the Attorney-in-Fact, and approval of rates. The Attorney-in-Fact is governed by its own Board of Directors that often includes one or more members of the Board of Governors of the reciprocal.

Mayers and Smith (1988) point out two major distinguishing differences between mutuals and reciprocals are: 1. Reciprocals are unincorporated with each subscriber insuring the other subscriber within the association. 2. In reciprocals, it is an attorney-in-fact who is appointed by the subscribers that operates the reciprocal.

According to Mayers and Smith (1988, 2002), the way to control the owner-manager interest conflicts problem in a reciprocal can be similar to that of either a mutual

¹⁰ Thus, each subscriber in a reciprocal is both an insurer and an insured.

¹¹ Best's insurance reports also use the following terms to indicate Board of Governors interchangeably: board of directors and advisory committees.

insurance company or a closely held common stock insurance company, depending on the structure of the reciprocal. Compared with mutuals, the costs of withdrawing the ownership in reciprocals are lower than mutuals if the subscriber's agreement allows the withdrawal of surplus. Another control device that reciprocal subscribers have is the potential to discipline management by forced dissolution of the association through the courts given the court interpretation of the nature of a reciprocal association. Similar to mutuals, one way to control managerial discretion in reciprocals is geographic concentration. Mayers and Smith (1988) find that reciprocals have higher degree of geographic concentration than stocks.¹² Therefore, while reciprocals have more similar corporate governance structures as mutuals, they do have some mechanisms similar to stocks.

In conclusion, there are various organizational forms and ownership structures in insurance industry. The costs of controlling managerial discretion are higher in mutuals than in stocks while those of reciprocals are between mutuals and stocks. The stock insurance companies can be further classified as publicly listed or closely held according to the liquidity of owners' shareholding. The presence of controlling family in both publicly listed and closely held stock companies is also prevalent in insurance industry. The way to control owner-manager agency problems among stock companies depends on the characteristics of the ownership structures. Generally, each organizational forms and ownership structures has specific features to control the problem of management entrenchment or larger shareholder's expropriate of small shareholder's interests.

¹² Just as there are family-controlled mutuals, a few reciprocal is managed by the attorney-in-fact that is ultimately controlled by a family. The number of the reciprocals with family-controlled attorneys-in-fact is very limited, 6 indicated in Best's reports.

2.2 Top Executive Turnover and Succession in Publicly-Listed Companies

Over the past three decades, a large body of literature reports evidence on different aspects of CEO turnover and succession in industrial firms.¹³ The general consensus is established that the likelihood of CEO turnover is inversely related to firm performance (Coughlan and Schmidt, 1985 and Waner, Watts and Wruck, 1988). While the likelihood of CEO turnover and firm performance are inversely related, the likelihood of CEO turnover is more sensitive to firm performance with stronger corporate governance within a firm. For example, Weisbach (1988) finds that CEO turnover is negatively related to the firm performance and that the relationship is stronger when the fraction of outside directors on the board is higher than inside directors. He also finds that there is a stronger association between prior firm performance and the likelihood of non-routine turnover when the board is comprised of a majority of outside directors. He argues that outside directors have more incentives to remove CEO on the base of firm performance than inside directors. His evidence is consistent with the argument of Fama and Jensen (1983) that outside directors have incentives to enhance the value of their human capital by signaling to the managerial market that they are experts of decision control while inside directors are less willing to challenge CEO to whom their careers are tied.

Another important determinant of performance-turnover sensitivity is the managerial ownership. Denis, Denis and Sarin (1997) report the evidence that it is difficult to remove

¹³ While many top executive turnover studies focus on publicly-traded industrial firms and generally exclude the highly regulated financial institutions, such as banks and insurance companies, others do not exclude financial institutions. For example, Warner, Watts, and Wruck (1988), Weisbach (1988), Denis and Denis (1995), Denis, Denis, and Sarin (1997), Borokhovich, Parrino and Trapani (1996), Parrino (1997) do not explicitly point out whether they exclude financial institutions from their sample. Fee and Hadlock (2004), Kang and Shivdasani (1995), Volpin (2002) and Brunello, Graziano and Parigi (2003) exclude banks, insurance companies and financial holding companies in their study. There is limited literature about top executive turnover which only focuses on financial institutions. One exception is Cannella, Fraser and Lee (1995), who analyze the managerial labor market's ability to discriminate between good and bad managerial performance by using a sample of failed and surviving Texas banks.

poorly performing CEO when the ownership held by the management is high. They also find that likelihood of CEO turnover is positively related to the presence of an outside blockholder after controlling for firm performance. They suggest that internal monitoring mechanism cannot function well and the quality of corporate governance is lower with increased managerial ownership within a firm.

Several studies also document the impact of takeover activity on the effectiveness of internal monitoring mechanism and performance-turnover sensitivity in industrial firms and the evidence is mixed. Denis, Denis and Sarin (1997) explain one of the reasons that CEO turnover decision is less sensitive to firm performance with higher managerial ownership is managers' ownership partially insulates them from takeover market, which is associated the effectiveness of internal monitoring mechanism. Both Hadlock and Lumer (1997) and Mikkelsen and Partch (1997) find that the association between CEO turnover and firm performance is weaker during periods when there is less takeover activity. However, Hudson, Parrino and Starks (2001) report evidence that changes in the intensity of the takeover market and the sensitivity of CEO turnover to firm performance are not associated. Thus the intensity of the takeover market seems to have no impact on the effectiveness of internal monitoring mechanism.

The negative relationship between CEO turnover and firm performance and how corporate governance quality affects this relationship are also examined by using international industrial firm data. Kang and Shivdasani (1995) find that non-routine turnover likelihood is significantly and negatively related to firm performance in Japanese firms, and this relation is stronger for firms with ties to a main bank and high levels of block ownership than for firms without these mechanisms. Volpin (2002) studies

the determinants of CEO turnover for firms listed on Italian stock market. His results suggest that the probability of CEO turnover and its sensitivity to firm performance decrease significantly for CEOs who are from the controlling family of the firm than for other non-family-member CEOs. He also finds that the sensitivity of CEO turnover to firm performance is stronger when the fraction of cash-flow rights owned by the controlling shareholder is larger and there is voting syndicate controlling the firm.¹⁴

Overall, the evidence reported by past literature in industrial firms suggests that in publicly listed companies, the probability of CEO turnover, especially that of non-routine turnover, is negatively related to firm performance. The magnitude of this relation, however, depends on the quality of corporate governance within the firm.

The quality of corporate governance does not only affect the likelihood of CEO turnover and the turnover-performance sensitivity, but the likelihood of a new CEO chosen from outside the company, especially when the previous CEO is forced to resign. Similar to CEO turnover, the likelihood of an outside replacement is negatively related to prior firm performance (Warner, Watts and Wruck, 1988; Parino, 1997). For example, Gilson and Vetsuypens (1993) find that an outsider is more likely to be appointed to the CEO position in financially distressed firms. The reason that an outside candidate is preferred in a poorly performing firm is that they are perceived as more likely to alter the firm's failed policies in the way that benefits the shareholders (Borokhovich, Parrino, and Trapni, 1996; Parrino, 1997). Borokhovich, Parrino, and Trapni (1996) report the evidence that the market views outside appointment more favorable than inside appointment following both routine and non-routine turnover. They observe a significant positive

¹⁴ A voting syndicate is "a coalition of relevant shareholders who sign a binding agreement to vote together for a few years" (Volpin, 2002).

abnormal return of outside appointment no matter the incumbent CEO is voluntary or forced removed. In contrast, when an insider is appointed to the CEO position, a small positive abnormal return is observed in the voluntary successions while a large negative abnormal return is observed in the forced replacement.

Borokhovich, Parrino, and Trapni (1996) claim that the fraction of outside members on the board is an important determinant of outside replacement. In order to enhance the value of their human capital in the managerial market, the outside board members have higher incentives to select the best candidate to the CEO position regardless of his source, and this increases the likelihood of outside appointment. Inside directors, however, are less willing to support outside appointment decision when there is CEO turnover in the company. There are several reasons that inside directors will tend to be against the outside appointment. First, inside directors are usually the leading candidates for the CEO position (Hermalin and Weisbach, 1988). Second, a new CEO outside the firm is expected to break the firm's policies that are developed and implemented by the inside directors (Borokhovich, Parrino, and Trapni, 1996). Finally, inside directors may resist the appointment of outsiders in order to protect their jobs (Helmich and Brown, 1972). The evidence reported by Borokhovich, Parrino, and Trapni (1996) suggests a positive relation between the fraction of outside members on the board and the likelihood of an outside appointment.

Prior finance literature shows that stronger corporate governance mechanisms discipline management effectively by removing poorly performing CEOs and searching the best candidate to the CEO position, which increases the likelihood of outside appointment. Therefore, CEO turnover and succession decisions provide a good setting to

evaluate the quality of corporate governance mechanisms within a firm (Kang and Shivdasani, 1995; Volpin, 2001). However, it seems that most studies examining the association between the quality of corporate governance mechanisms and CEO turnover and succession decisions focus on publicly listed company. Very limited literature investigates the pattern of CEO turnover and succession in non-publicly listed companies. The only exception is Coles, Lemmon and Naveen (2003), who find no evidence that CEO turnover is more sensitive to change in scaled profitability in closely held firms than publicly listed firms by examining data on closely held firms from the *Forbes* annual list of top 500 private firms. However, their focusing on only large closely held firms makes their results unable to be generalized to other non-publicly listed corporations. This study intends to fill this research gap by examining the characteristics of CEO turnover and succession in insurance industry, in which various organizational forms and ownership structures coexist and have their own specific features of corporate governance mechanisms.

CHAPTER 3

HYPOTHESIS DEVELOPMENT

According to the aforementioned literature about organizational forms and ownership structures in insurance industry, insurers in United States generally can be classified into three categories of organizational forms: stocks, mutuals, and reciprocals. Moreover, I further categorize stock insurance companies into four types of ownership structures: publicly listed family firm, publicly listed non-family firm, closely held family firm, and closely held non-family firm.¹⁵ Figure 1 provides a branch diagram that outlines the types of insurers in this study.¹⁶

Mayers and Smith (1988, 2002, 2005) suggest that compared with stocks, the ownership of mutuals cannot be transferred freely since it resides on the insurance policy. The inalienability of ownership right makes it not possible for mutuals to form the capital market and being subject to monitoring by stock analyst, institutional investors and blockholders. The takeover activity for mutuals is costly and ineffective due to the inalienability of ownership. Based on this argument, my first hypothesis is:

Hypothesis 1: Mutuals have lower probability of CEO turnover and lower sensitivity of CEO turnover to firm performance than stocks.

¹⁵ I do not include risk retention group and Lloyds due to their relative small market share in the U.S. insurance industry.

¹⁶ I acknowledge that the diagram and the categories are not exhaustive. For example, there are family controlled mutuals and reciprocals, firms owned by foreign (versus domestic owners), firms controlled by general financial services companies versus industrial firms such as General Electric (versus insurance organizations). I omit these categories in the diagram because either the number of these firms is very limited or it is not easy to clearly explore the corporate governance mechanism in these organizational forms (e.g., foreign owned firms).

Past literature suggests that the main corporate governance mechanisms in publicly listed insurance companies are internal monitor system from board of directors, external monitor from the capital market, and threat from takeover market. In mutuals, the main corporate governance mechanism is monitoring from the board of directors. Mutuals are found to have a higher fraction of outside members on the board than stocks (Mayers, Schivdasani, and Smith, 1997). Hence, whether publicly listed insurance companies have a superior corporate governance system than insurers with mutual ownership is an empirical question. I study this issue by empirically examining the likelihood of CEO turnover and its sensitivity to firm performance in these two organizational forms.

Hypothesis 2: Mutuals have lower probability of CEO turnover and lower sensitivity of CEO turnover to firm performance than non-family publicly listed stocks.

On one hand, reciprocals share the similar ownership structure as mutuals by combining the role of insurer and insured to minimize the owner-policyholder agency problem. Reciprocals have neither direct external control from the capital market nor active takeover threat to discipline their CEOs (Attorney-in-Facts). In this case, the performance-CEO turnover link is lower in reciprocals than that in stocks. On the other hand, subscribers in reciprocals have an alternative mechanism to discipline managers by either withdrawal of the capital or forced dissolution of the association. Thus, the performance-CEO turnover link might be stronger in reciprocals than that in mutuals. Thus, this leads to the next hypothesis:

Hypothesis 3: The probability of CEO turnover and its sensitivity to firm performance in reciprocals are higher than mutuals and lower than stocks.

I also test how well the corporate governance mechanisms affect the CEO turnover possibility in both closely held and publicly listed stock insurance companies. The effectiveness of corporate governance mechanisms of closely held companies stems mainly from the monitoring of a relative few number of owners who are familiar and involved in the management while the capital market enhances the effectiveness of corporate governance mechanisms of publicly listed companies. Ke, Petroni, and Safieddine (1999) posit that closely held insurers should have more direct monitoring of management by owners. I compare the likelihood of CEO turnover of closely-held and publicly-listed insurance companies and their sensitivity to firm performance to study how effectively their specific corporate governance mechanisms work in disciplining managers in insurance companies. The sensitivity of CEO turnover to firm performance may be stronger in either closely-held or publicly-listed insurance companies since they have their own specific advantage on the corporate governance mechanisms. I posit the following hypothesis based on the assumption that the capital market is more effective than a few more diligent and firm-familiar board members in discipline managers.

Hypothesis 4: Publicly-listed stock insurers are more likely to remove CEO when the firm is poorly performing than closely held stock insurers.

Poorly performing family-member CEOs have relatively large power and are more

difficult to remove due to the family's large ownership and entrenchment characteristics (Morck, Shleifer and Vishny, 1988). Higher managerial ownership causes less effective external and internal manager monitoring mechanisms and thus weaker performance-managerial turnover link (Fredrickson, Hambrick, and Baumrin, 1988, Ofek, 1993, Denis and Denis, 1994, Mikkelson and Partch, 1996, Dennis, Dennis and Sarin, 1997).¹⁷ The controlling family also has an incentive to expropriate the minority shareholders. On the other hand, controlling family has a higher incentive to invest their long-term human capital in the firm. Thus, I expect that family-member CEOs have lower turnover probability and performance-turnover sensitivity than non-family-member CEOs of family firms and CEOs of non-family firms. This leads to the following hypothesis:

Hypothesis 5: Among common stock insurance companies, family-member CEOs of a family firm have the lowest likelihood of turnover and turnover-performance sensitivity.

If the CEO in a family controlled firm is not a family member, she is closely monitored by the controlling family besides the normal disciplining of the corporate monitoring mechanism including the board and capital market. The controlling family generally serves as a more effective monitor than other blockholders. Cummins and Sommer (1996) suggest that "owner-manager conflicts are expected to be smallest in closely held firms owned by managers (in my case, it is closely-held family firms and

¹⁷ Denis et al. (1997) find that greater ownership by managers reduces the likelihood of their replacement. An alternative explanation is that greater ownership by managers leads to better performance and less disciplinary turnover.

CEO is a family member) and largest in publicly-traded firms, with closely-held firms owned by other parties providing an intermediate case” (p. 1077). Therefore, the sensitivity of CEO turnover to firm performance of a non-family-member CEO in a family firm might be higher than that of a CEO in a non-family firm. This leads to the following hypothesis:

Hypothesis 6-1: Compared to peers in non-family-controlled publicly listed firms, CEO in a family-controlled publicly listed firm is more likely to be removed if she is not a family member.

Hypothesis 6-2: Compared to peers in non-family-controlled closely held firms, CEO in a family-controlled closely held firm is more likely to be removed if she is not a family member.

According to the literature review in section 3, an outside candidate is expected to change a firm’s policies when a firm has been performing poorly.¹⁸ Hence, I have the following hypothesis:

Hypothesis 7: The likelihood of outside replacement is higher when a firm’s performance is poor, regardless of the insurers’ organizational forms and ownership structures.

¹⁸ The effectiveness of the corporate governance mechanism is also expected to play a role in deciding whether an incoming CEO is an outsider. However, due to the limited sample size, it is difficult to further explore the difference in succession decisions among insurers with various organizational forms and ownership structures.

CHAPTER 4

SAMPLE AND METHODOLOGY

4.1 Sample

My main data sources are Best's Insurance Reports Property/Casualty Edition from 1993 to 2006, the NAIC annual statement database, and proxy statements of the publicly listed insurance companies. The sample consists of property-casualty insurers who have CEO information on the "Management" section on Best's Insurance Reports and executive biography on the proxy statements for publicly listed companies from 1993 to 2006. I also include new entrants that are incorporated after 1993 and still active in 2006. Both Kang and Shivdasani (1995) and Volpin (2002) indicate that foreign companies have corporate governance and accounting practices different from US firms, thus, 70 foreign insurance companies, including individual companies and insurance groups, are dropped from the sample. I exclude 110 companies that disappear before 2006 due to the regulatory actions to avoid the factors, such as insolvency or liquidation, to distort the CEO turnover results.¹⁹ Following Denis and Denis (1995), I also eliminate 289 insurance companies that are merged or acquired during the sample period because I am interested in the relationship between firm performance and corporate governance mechanisms among firms with different organizational forms and ownership structures.²⁰

For most non-publicly listed insurance companies, the "Management" section on Best's

¹⁹ The disappearance of these companies is not necessary related to firm performance. I provide more discussion on this issue on Section 5.4.4.

²⁰ There are 350 M&A events and 226 cases are associated with CEO turnover. Lehn and Zhao (2006) study the CEO turnover of acquiring firms and find a significant negative relationship between bidder returns and the likelihood of CEO turnover. They find that 47 percent of CEOs of acquiring firms are replaced within 5 years, including 27 percent by internal governance. Kaplan and Minton (2008) explicitly study the "external turnover" due to a merger or bankruptcy/delisting of stock firms. They do not find a relationship between external turnover and any of the measures of stock performance. Further discussions are provided in section 5.4.4.

Insurance Report provides a brief description of a company's organizational form, ownership structure and management, such as who owns the company, when the CEO is appointed to the CEO position and when the CEO starts to serve in the company. It also reports the names and titles of the company officers and the names of each member on the board.²¹ For publicly-listed companies, the brief biography of their top executives is also reported on the proxy statements, as well as the information about the board members.²²

My primary sample includes both insurance groups and individual insurance companies. For the insurance group, I treat the whole group as an independent unit. Blackwell et al. (1994) argue that it is the holding-company staff rather the boards of subsidiary banks, play a dominant role in deciding the retention or removal of subsidiary executives. They find evidence that it is quite common that one person simultaneously holds several executive positions in different subsidiary banks. Treating each insurance group as an independent decision making unit can minimize sample bias because the subsidiaries within a group share same ownership and management in many insurance groups (Ke, 2001; Beatty, Ke and Petroni, 2002). If I treat these subsidiaries as individual decision unit, one CEO turnover event of the group might be counted several times along with its several subsidiaries and the analysis would be biased.²³ For example, Celina Mutual Group has four companies in the group with same CEO and board composition

²¹ In reciprocals, it could be Board of Governors, Advisory Board or Advisory Committee.

²² The NAIC annual statement database also provides the name of President for each insurance company. However, the information may not be consistent with Best's Report. For example, the top executive in Best's Report may be CEO; however, it is President who is listed in NAIC database. Further, the information about board members and other executives is not available from the NAIC database.

²³ I do not treat stock-controlled mutuals and mutual-owned stocks as independent observation units since they are subsidiaries of an insurance group and share the same management with the lead company in the group. If I count them into my sample as independent observation units, one CEO turnover event will be counted more than once and the results will be biased.

on 2006 Best's Insurance Report.

The financial information and other control variables such as net income, net premiums written, net admitted assets, etc. are collected from the NAIC annual statement database by matching the company's NAIC code provided by Best's Insurance Reports. In most cases, Best's Insurance Reports provide the NAIC code for the whole group. Otherwise, I first use the NAIC code of its lead company to find out this individual company in the NAIC annual statement database. The NAIC database gives the group name and NAIC code for the group if the individual company is group affiliated. Thus, I am able to find the group code and group name from the information associated with the lead company. Then, I use the group's NAIC code to find related information in the NAIC database. These codes are available for about 90 percent of the companies in the NAIC database. For the remaining insurers where the NAIC code is not available, I manually match firms in the two databases by using insurer's names first. To ensure the accuracy, I verify my sample matched by compare company location, officer name, total assets and net premiums written in the two databases. If the financial data of insurance group is still unavailable, I use the financial information of lead company to represent the whole group. As a robustness test, I also use the aggregate value of all individual companies in a group to replace the group company data. The results of all models remain almost unchanged.

4.2 Variables

4.2.1 Dependent Variables

A. CEO Turnover Events

I define the top executive as CEO when she holds the title of CEO in the company.²⁴ If an insurer has no individual listed as CEO, the executive who has the title of president is selected. If no individual is listed as either CEO or president, I define the chair of the board of directors as the top executive.²⁵

I code CEO turnover events first according to the information reported by A. M. Best's Insurance Reports Property/Casualty Edition and company proxy statements. When they provide the year in which the CEO is promoted to current position, the year of turnover can be easily identified. If the information about CEO turnover event is not revealed explicitly on the annual Reports and proxy, I identify them by tracking the names of relevant officers on the Report and proxy through 1993-2006. If there is any change of CEO names between two consecutive years (t and $t+1$), I define there is CEO turnover in the t^{th} year. I delete turnover of interim CEOs.

I also collect the CEO tenure information to measure the number of years the executive has served as CEOs. Tenure is correlated to CEO turnover rate since longer tenure in a given period implies less CEO turnover events. I calculate tenure as the year that the executive serves as CEOs minus the year he starts to assume this position. For example, in the year of 1996, the tenure of all CEOs in my sample is 1996 minus the year in which they became CEO. In many cases, Best's Insurance Reports, proxy statements and information from the Internet explicitly indicate when the CEO starts to hold this position. If I still cannot obtain this information, I check the Best's Insurance Reports of

²⁴ In some association related closely held and mutual insurance companies, the officer with CEO title is only responsible for the daily administration and the president of the company, usually the president of the association, is the decision maker. In this case, however, we still code the CEO as top executive.

²⁵ Usually, the Best's Insurance Reports and proxy statements have the names of company officers with following titles: Chairman of the board, President, CEO, Senior Vice President, Secretary, CFO, Vice President and Treasure. All company in our sample has at least one of the three titles: CEO, President or Chairman of the board.

previous years to see when is the first year they appear on the management section as CEO.²⁶ If she is first identified as CEO in the t^{th} year Best's Insurance Reports, I define her starting to assume this position in the $t-1^{th}$ year. If the CEO's starting year is earlier than the first year the company appears on the Best's Insurance Reports, I define that his starting year is left truncated at the year of the company's first appearance on Best's Insurance Reports. For those CEOs who are still on their position on 2006 Report, I define that their tenure is right censored at the year of 2006. My calculation of tenure is not affected by the change of organizational forms and ownership structures. If the company changes its organizational form or ownership structure during the sample period, I still count in the CEO's tenure before this change as part of his whole tenure.

B. Routine and Non-routine Turnover

Following Kang and Shivdasani (1995), I treat turnover events where the CEO still remains in the company as director or on the other capacity for more than two years as routine turnover.^{27,28} If not, I try to search the reason of CEO departure from the company's website and news articles on the Internet. This helps us to identify if the CEO departs the company because of normal retirement, death and health issue, or comparable appointment elsewhere. If I still cannot find the related information about the reason of

²⁶ In our sample, those companies with unavailable CEO start year information are exclusive non-public insurance compaies.

²⁷ I acknowledge that the method cannot perfectly classify routine and non-routine turnover. For example, Evans, Nagarajan, and Schloetzer (2010) find that, in about 25 percent non-routine turnover events, departing CEOs surprisingly still remain on the board for at least two years. However, many normal criteria to judge whether the turnover is routine or non-routine cannot apply in this study because most companies in my sample are not public companies and the related information about whether the turnover event is routine or non-routine is limited.

²⁸ When I collected the management and board information from Best's Insurance Report, I found that the management information and board information of an insurance company may not be updated at the same time. The update of board information may be one year lagged than the management information. Thus, I define the turnover event that previous CEOs stay on the board for at least two years as routine turnover to avoid the possible bias.

CEO departure, I classify it as non-routine turnover case.²⁹ This procedure may bias the routine turnover rate downward and non-routine turnover rate upward.

C. Inside and Outside Appointments

As for the source of new CEO, I first check if Best's Insurance Reports and proxy statements have this information. I treat the new CEO as an outsider if she is clear indicated as an outside CEO and as an insider if there is information about when she starts to be with the company. Following Parrino (1997), I classify the new CEO who has been with the company for one year or less when they are appointed as outsider. If this information is not available, I check if she starts to appear in the company's management team for more than two years prior turnover event.³⁰ If yes, I define her as the insider, otherwise, she is an outsider.

4.2.2 Independent Variables

A. Organizational Forms and Ownership Structures

I define the company's organizational form and ownership structure by the information provided by A.M. Best's Key Rating Guide, Best's Insurance Reports, NAIC Database and proxy statements of the publicly listed companies. If the information about the ultimate owner of stock insurance company is still not available, I further check it on

²⁹ In my dissertation, the main criteria to define routine and non-routine turnover is examining whether the CEO stays in the company or not after stepping down from his position. Since the majority of the company in my sample is not publicly-listed, the relevant information of CEO turnover reason is usually unavailable. In my sample, I only find 30 non-routine turnover cases that give explicit reason that CEOs are forced to resign among 251 non-routine turnover events. 18 of the 30 non-routine turnover cases with explicit reason are from publicly-listed stock companies while 12 cases are for non-publicly held companies. If I conduct the regression only with the 30 non-routine cases, I will lose most of sample and cannot get a convincing result.

³⁰ Similar to Denis and Denis (1995), I also define a CEO as an outsider if she is promoted from the independent director. Results are not sensitive to this definition of outsider succession.

the company's website and news sources on Internet. I define a closely held firm as family firm if the information from the "Management" section on Best's Insurance Reports gives explicit detail information that a family owns the majority of the firm. For a publicly-listed insurance company, I classify it as a family firm if more than 5 percent of firm shares are owned by the family, following Anderson and Reeb (2004).³¹

Many firms change organizational forms and ownership structures during the sample period, for example, mutualization, demutualization, and going public. In more detail, there are 38 IPO and 10 demutualization events in my sample. There are also 3 reciprocal exchanges became mutuals during my sample period. My definition of organizational forms and ownership structures will vary with this change. For example, if the company is demutualized and conducts IPO to become a publicly listed stock company in 2000, it is coded as mutual company before 2000; and publicly listed stock insurance company since 2000.

B. Performance

I use book ROA (return of assets) as the base proxy for firm performance.³² Several alternative proxies are used for performance measure.³³ First, I use ROE as a robustness check.³⁴ Second, following Denis and Denis (1995), I also use operating

³¹ If the ultimate owner of an insurance company is an industrial firm from other non-insurance industry, such as GE, I classify it into the category of "other main business" to control its effect on CEO turnover decision.

³² Since our financial variables are collected from the NAIC annual statement database, they are based on the SAP rather than GAAP rule.

³³ In the current version, only the result of ROA is reported to save the space. Results of other proxies for performance are available upon request from the author.

³⁴ Combined ratio and ROE/ROA are available accounting data in all insurance companies. Return here is defined here as net income (after taxes and extraordinary items). Equity is defined as surplus. Assets are net admitted assets. Tobin's Q and stock return data are only available for public stocks.

income to total assets ($ROA2=OIBD/TA$) to proxy for firm performance.³⁵ Similar to Mayers and Smith (1992), I define operating income as the income before taxes and dividends to policyholders. Third, combined ratio is also used as another proxy for the performance measure because it's extensive use in the insurance literature. Finally, I create a negative net income dummy that equals to one if the firm has a negative net income for robustness tests purpose. Kang and Shivdasani (1995) find that CEOs in firms with average negative operating income over three fiscal years are more likely to be replaced. All results provide similar patterns on turnover and succession decisions with alternative measure of performance.

Industry performance is also used to control firm exogenous shock to performance and help to control the underwriting cycle effects in insurance industry.³⁶ I include industry performance as a control variable following previous literature. I expect a positive coefficient of the industry performance variable, which is proxied by the median industry performance measures: ROA, ROE, OIBD/TA, and combined ratio. However, Jenter and Kanaan (2009) argue that the corporate board cannot effectively filter exogenous shocks from CEO dismissal decisions and standard CEO turnover model is too simple to reveal the whole picture. They show that a decline in the industry performance leads to more frequent individual firm CEO turnover, i.e., a negative relationship between the industry performance and CEO turnover possibility. Thus, the sign of the industry performance variable remains an empirical issue.

³⁵ In insurance, net admitted assets are generally used rather than assets.

³⁶ Extant literature suggests that industry factors, which are out of the control of individual firm CEOs, are usually filtered from the dismissal decision by the board of directors (Morck, Shleifer and Vishny, 1989, Barro and Barro, 1990, Gibbons and Murphy, 1990). Although these studies suggest an insignificant coefficient of the industry performance variable in their studies, it is not applicable to my paper because I are studying a single industry. Nevertheless, as robustness tests, I also apply the industry adjusted firm performance variables in our models. For combined ratio, OIBD/TA, ROA and ROE, I adjust them by deducting the industry median or mean.

I use one year's lag of these performance measures as boards are believed to react relatively fast to poor performance in the CEO dismissal decision (Warner, Watts, and Wruck, 1988, Weisbach, 1988, and Murphy and Zimmerman, 1993). I also used the average of the performance measures for the two years prior to the turnover event to estimate a robustness test although sample observations are reduced substantially.³⁷

4.2.3 Other Control Variables

A. Board Independence

Under-performing CEOs are more likely to be replaced when the board is dominated by outsiders rather than insiders (Jensen and Warner, 1988; Weisbach, 1988; Furtado and Karan, 1990; Borokhovich, Parrino and Trapani, 1996). Inside directors are reluctant to challenge the incumbent CEO to whom their personal careers are tied (Weisbach, 1988). On the other hand, outsiders have less personal relationship with the incumbent CEO. Further, their reputation depends on how they effectively monitor managers, i.e. replace under-performing CEOs. They want to improve their human capital on the managerial market by sending positive signals concerning their abilities as experts in decision control (Fama and Jensen, 1983). However, the relation between the board independence, the sensitivity of performance and the top executive turnover can be weaker in the ownership structure where the CEO has more power and influence on the board or the directors have less incentive to monitor.

For each sample firm-year, I identify the composition of the board of directors from

³⁷ Jenter and Kanaan (2009) argue that accounting profitability is at best a noisy measure of firm performance because it is affected by many one-off items and displays strong mean-reversion. I follow their methodology and use two-year and three-year changes in the performance variables as robustness measures of accounting performance. All results remain similar.

the Best's Insurance Reports for non-publicly listed insurance companies, and proxy statements for publicly listed companies.³⁸ Following the independence requirement by NYSE, I define the outside directors in the non-publicly listed insurance companies as those who are not listed as the executives in the company or in the same insurance group and do not have the same last name as any executive listed on Management section in Bests' Insurance Reports. If the director is from the controlling family, she is also classified as an inside directors. In the routine turnover cases, I also classify the retired CEO as inside for three years following the turnover if he still stays on the board after the retirement. I use the proportion of outside directors on the board to proxy the board independence. Similar to Weisbach (1988), I also classify that all firms in which outsiders make up no more than 40% of the directors are considered insider-dominated firms, and all firms in which at least 60% of the board are outsiders are designated outsider-dominated firms.

B. Board Size

Larger boards are considered sometimes to be less effective monitors of managerial performance (Jensen, 1993).³⁹ Fredrickson, Hambrick, and Baumrin (1988) suggest that larger boards are unmanageable because of the negative relationship between board cohesive and its size. Yermack (1996) indicates that CEO dismissal incentives are weaker as board size increases. The reason might be that the “coordination, communication, and decision-making problems increasingly hinder board performance when the number of

³⁸ For some publicly listed firm year observations which proxy statements are unavailable, I take their board information from the proxy statement in the nearest available year. Weibasch (1988) indicates that this approximation is not too inaccurate since board composition remains stable over time.

³⁹ Jensen (1993) argue that when boards are less likely to function effectively and are easier for the CEO to control when they are more than seven or eight people sitting on board.

directors increases” (Yermack, 1996, page 194). Eisenberg, Sundgren and Wells (1998) show that larger boards are associated with lower firm value. Therefore, I expect a negative relationship between board size and the possibility of CEO turnover.

C. Firm Size

On one hand, larger firms tend to remove their top-level executives more frequently than do small firms because larger firms are more visible to the public and subject to closer regulatory scrutiny (Fizel, Louie and Mentzer, 1990; Eyst, 1997). Further, larger firms typically have larger internal pools of general management talent. Large firms have greater managerial depth and are more complex organizations. Large-firm CEOs are more likely to be forcibly replaced by an insider than small-firm CEOs. The larger the firm, the more likely it is that a dissatisfied board would dismiss the CEO because it has readily available alternatives (Furtado and Rozeff, 1987; Fredrickson, Hambrick, and Baumrin, 1988). Warner, Watts, and Wruck (1988) find that larger firms have higher “normal” management turnover in their sample period.⁴⁰

On the other hand, larger firms are likely to be more bureaucratic and hard to reorganize. A competent CEO needs many years of training, and it may be difficult to find a replacement. Incumbent CEOs in larger firms normally have proven their ability in past years and thus have more power to argue with boards. Denis, Denis, and Sarin (1997) find that top executive turnover is less likely in larger firms. Further, larger firms are less likely to receive takeover offers as well as to undergo a change in control (Mikkelson and Partch, 1989). Thus, CEOs in large firms are more insulated from outside takeover

⁴⁰ They argue that it might be due to the fact that the promotion and retirement policies in larger firms are designed to ensure shorter tenures in top management positions.

market and less likely to be removed. Hansmann (1985) suggests that the members in small mutual firms can monitor the operations of the firms more effectively because the small firm size can reduce members' incentive to free-ride on the monitoring efforts of other owners (policyholders). I measure the firm size as log total assets.

D. Business Complexity

On the one hand, reduced business complexity may lower the probability of top executive turnover. It is easier and less challenged for the incumbent CEO to manage a firm with simple business structures. They have less chance making mistakes and thus it is hard for the board to find reasons to replace them. On the other hand, increased business complexity may raise the threshold of knowledge for the board to understand whether the executive performs well and lead the negative relationship between business complexity and top executive turnover, especially when the board has less incentive and influence to monitor CEO action. Parrino (1997) find that the cost of replacing CEO is an important consideration for CEO turnover decisions. The higher requirement of managing complicated business increases the difficulty for the board finding a competent CEO candidate in turnover decisions. Larger information asymmetry between manager and board also makes the board unable to evaluate manager precisely. Thus, the sign of the business complexity remains an empirical question.

Past literature reports that organizational forms and ownership structures affect the business complexity of an insurance company. For example, mutual companies underwrite business with less managerial discretion, that is, less complex business, compared to stock insurers (Lamm-Tennant and Stark, 1993). This kind of business is

less challenging for manager's ability and thus executives might enjoy peaceful life and perform well. Mutual CEOs need less required managerial discretion that means their chances of making mistakes are less than stock CEOs'. Mutual CEOs can keep their slots even if their schemas and strategies become obsolete over time. This reasoning also leads to a prediction to lower turnover rates and longer tenure for mutual CEOs.⁴¹ Thus, when I compare the likelihood of CEO turnover among various organizational forms and ownership structures, I need to control the effect of business complexity. I use the proportion of net premiums written in personal lines and long-tail commercial lines with short-tail commercial lines omitted to avoid singularity.⁴² The higher the proportion of net premiums written in long-tail commercial lines, the higher the firm's business complexity is. The higher the proportion of net premiums written in personal lines, the lower the firm's business complexity is.

Insurers might also diversify risk by writing across many different product lines and/or across different geographic areas. Therefore, Herfindahl indices for product mix and geographic spread are included in the model. The lower the HHI, the higher degree of complexity of business are expected to be.

4.3 Methodology

4.3.1 Logistic Regressions for CEO Turnover

I first estimate logistic regressions using the likelihood of a CEO turnover in year $t+1$ as the dependent variable.

⁴¹ On the other hand, the more discretion authorized to agents, the larger the potential to operate in their self-interest at the expense of the firm's other contracting parties. The entrenchment opportunity is larger in stocks per this perspective.

⁴² I also use the proportion of loss reserve in long-tail lines and commercial lines to proxy for the complexity of business as robustness check and get similar results (Cummins and Nini, 2002).

$$Y_i = \alpha_1 + \beta_1' X_i + \varepsilon_i \quad (1)$$

where the dependent variable Y_i is the unobservable propensity for CEO turnover. Y_i is set equal to one if there is a turnover in the firm-year, otherwise it is set equal to zero. X_i is the vector that contain observations on the explanatory variables; and ε_i is a mean-zero random error term that is assumed to follow the logistic distribution. α_1 is the intercept and β_1' is the vector of coefficients.

I then estimate multinomial logistic turnover models in which the dependent variables reflect the turnover outcomes. More specifically, multinomial logistic turnover model is the extension of binary logistic regression that allows the simultaneous comparison of more than one contrast. That is, the log odds of three outcomes: no turnover, routine turnover, and non-routine turnover, are estimated simultaneously. I code z equals to 0, 1, 2 for no turnover, routine turnover, and non-routine turnover, respectively. No turnover outcome is used as the base outcome, i.e., the comparison category. I estimate two sets of coefficients, β_j ($j=1,2$) corresponding to routine turnover, and non-routine turnover, respectively.

$$\Pr(z = 0) = \frac{1}{1 + e^{X\beta_1'} + e^{X\beta_2'}}$$

$$\Pr(z = 1) = \frac{e^{X\beta_1'}}{1 + e^{X\beta_1'} + e^{X\beta_2'}}$$

$$\Pr(z = 2) = \frac{e^{X\beta_2'}}{1 + e^{X\beta_1'} + e^{X\beta_2'}}$$

where for the i th individual, z is the observed outcome and X is a vector of explanatory variables. The unknown parameter vectors β_j are estimated by maximum likelihood.

Separate relative risk ratios are determined for all independent variables for each

category of the independent variable with the exception of the comparison category of the dependent variable, which is omitted from the analysis. Relative risk ratios, the exponential beta coefficient, represent the change in the odds of being in the dependent variable category versus the comparison category, no turnover, associated with a one unit change on the independent variable. For example, the relative probability of routine turnover to the base outcome, no turnover event, is

$$\frac{\Pr(z = 1)}{\Pr(z = 0)} = e^{X\beta_1'}$$

If I call this ratio the relative risk, and I assume that X and β_1' are vectors equal to (x_1, x_2, \dots, x_k) and $(\beta_{11}, \beta_{12}, \dots, \beta_{1k})'$, respectively. Then the ratio of the relative risk for a one-unit change in x_i is

$$\frac{e^{\beta_{11}x_1 + \dots + \beta_{1i}(x_i+1) + \dots + \beta_{1k}x_k}}{e^{\beta_{11}x_1 + \dots + \beta_{1i}x_i + \dots + \beta_{1k}x_k}} = e^{\beta_{1i}}$$

4.3.2 Bivariate Probit Model for CEO Succession

I estimate the CEO succession type using the bivariate probit model to adjust for potential selection bias. Borokhovich, Parrino and Trapani (1996) argue that the decision for turnover and successor choice decisions are not independent because the decision to replace a CEO is contingent on the availability of a qualified successor. The bivariate probit methodology accounts for the selectivity problem by using a full information maximum likelihood method to estimate simultaneously the coefficients for the two relations.

It is plausible that the board will not fire an incumbent CEO until they believe a new CEO can be found either promoted from insider or hired from firm outside. The

observations of outside or inside succession decisions are also contingent on the occurrence of turnover. Thus, the board's decisions on whether and how to replace the incumbent CEO and their preference of outside succession are related. Bias will happen if I do not consider the two way relationship between turnover decision and CEO succession choices. I follow Borokhovich, Parrino and Trapani (1996) and estimate a bivariate probit model to control the potential selectivity problem, which is first used by Van De Ven and Van Praag (1981). In detail, I jointly estimate a turnover decision and a CEO succession choice.

$$\delta_i = \alpha_1 + \beta_1' X_i + \varepsilon_{i1} \quad (2)$$

$$\gamma_i = \alpha_2 + \beta_2' X_i + \varepsilon_{i2} \quad (3)$$

In this jointly estimated model, the dependent variables δ_i and γ_i are the unobservable propensity for CEO turnover and outside succession. The observed values of Y_i is defined as in equation (1), i.e., coded 1 if there is a turnover; otherwise it is coded 0. It is assumed that $Y_i = 1$ if $\delta_i > 0$ and 0 otherwise. Similarly, the observed values of S_i is set equal to one if the succession type is outside succession which happens if an outsider is promoted to CEO condition on turnover, otherwise it is set equal to zero. It is assumed that $S_i = 1$ if $\gamma_i > 0$ and 0 otherwise. It is noteworthy that when S_i is observed to be zero, there are actually two cases, inside succession and family succession. Inside succession happens if an insider is promoted to CEO condition on turnover. Family succession happens if a family member is promoted to CEO condition on turnover. I roughly consider family succession is a special case of inside succession. In the robustness tests, I drop all family-firm-year observations to check if my classification

rule does not change the results significantly. X_i is the vector that contain observations on the explanatory variables, and ε_{i1} and ε_{i2} are random error terms assumed to be bivariate normally distributed with correlation coefficient ρ . α_1 and α_2 are the intercept and β_1' and β_2' are the vector of coefficients.

Previous literature suggests that the likelihood of both non-routine turnover and outside succession increases when firm performance is bad. The outcomes between the board's choice of routine/non-routine turnover and inside/outside succession might be driven by the same factors potentially related, that is, performance of the firm. Thus, I expect that an outside succession is more likely associated with a non-routine turnover while I observe more inside succession when routine turnover happens. I apply the bivariate probit model to jointly estimate two unobserved latent variables: routine/non-routine turnover and inside/outside succession. There are four mutually exclusive outcomes: routine turnover with inside succession; routine turnover with outside succession; non-routine turnover with inside succession; and non-routine turnover with outside succession. The parameters are estimated by maximum likelihood. More specifically, the dependent variable δ_i is the unobservable propensity for CEO non-routine turnover. The observed values of Y_i is coded 1 if there is a non-routine turnover; and coded 0 if there is a routine turnover. It is assumed that $Y_i = 1$ if $\delta_i > 0$ and 0 otherwise. Note that only observations of turnover are kept for this bivariate probit model.

CHAPTER 5

RESULTS AND DISCUSSION

5.1 Descriptive Statistics

Table 1 documents the summary statistics on financial variables for the full sample. I calculate several performance measures: ROA, ROABTD, and ROE.⁴³ Mean (Median) ROA, ROABTD, and ROE are 2.6 percent (2.7 percent), 4 percent (4 percent), and 6 percent (6.6 percent), respectively. Combined ratio is an insurance specific operational performance measure. Mean (Median) combined ratio is 104.4 percent (100.6) percent. Other control financial variables are self-explanatory and explained in the variable description of Table 1. Pairwise correlations among all variables are provided in Appendix Table 1-A.

Table 2 presents the descriptive statistics of corporate governance variables for each category of organizational forms and ownership structures.⁴⁴ ⁴⁵ There are 748 firms in my sample. Over my sample period 1993-2006, there are 4,073 mutual firm-years, 2,948 closely held stocks firm-years, 1,163 publicly listed stocks firm-years, 390 reciprocal association firm-years, and 229 firm-year observations for insurance companies controlled by the company in other main industry. Closely-held stocks firm-years include 750 closely-held non-family firm-years, 1,723 closely-held family firm-years with a

⁴³ ROE is the ratio of net income after taxes and extraordinary items to equity (surplus here). ROA is the ratio of net income after taxes and extraordinary items to total admitted assets. ROABTD is the ratio of operating income on assets which is the income before taxes and dividends to policyholders.

⁴⁴ Although my analyses focus on the mutual and stock insurance companies, I also present the descriptive statistics results of reciprocal due to their significant portion in our sample. Firm is classified as other main business if it is ultimately owned by a parent firm not in the insurance industry. 26 firms (221 observations) which I am unable to find the exact organizational form are dropped from the sample. I do not include risk retention group and Lloyds in my sample due to their relative small proportion in the sample and special characteristics.

⁴⁵ Appendix Table 2 provides the results of full sample. The total observations declined from 9335 of the full sample to 8715 of current sample due to the missing data for ROA among other main control variables. Nevertheless, the pattern remains virtually unchanged.

family member CEO, 475 closely-held family firm-years with a non-family member CEO.⁴⁶ This implies that roughly 75% of closely held insurance company is owned by controlling families, which is consistent with the argument by Fama and Jensen (1983) that restricting the ownership of closely held company to a few number shareholders is the most effective way to control the agency cost. Publicly listed stocks firm-years are consisted of 378 publicly listed family firm-years with a family member CEO, 183 publicly listed family firm-years with a non-family member CEO, and 514 publicly listed non-family firm-years.⁴⁷

Mutual, reciprocal, closely held and publicly listed non-family firms have larger boards while family owned closely held firms have significantly smaller boards. Interestingly, a similar pattern applies to board independence. Mutual, reciprocal, closely held and publicly listed non-family firms have more outside board members while publicly listed and closely held family firms have significantly less outside board members. The distributions of board independence for my sample of mutuals, reciprocals and non-family stocks are: the mean (median) proportion of outside members on board is 0.708 (0.727) for mutuals, 0.735 (0.846) for reciprocals, 0.659 (0.778) for closely held non-family stocks, and 0.731 (0.750) for publicly listed non-family stocks. This result implies that the conclusion drawn by Mayers, Shivdasani, and Smith (1997) that mutuals tend to have higher proportion of outsider on the board than all stocks is mainly driven by the disproportionate low degree of board independence of family-firms.

The order of mean length of CEO tenure is basically as following: Family-member CEO for family firms (17.968 and 11.789 years for publicly listed and closely held family

⁴⁶ Many of the closely held non-family firms are owned by business associates.

⁴⁷ In our sample, those companies with unavailable CEO start year information are exclusive non-publicly listed insurance companies.

firm, respectively), CEOs for mutuals (7.865 year), CEOs for non-family firms (6.572 and 6.512 years for publicly listed and closely held non-family firms, respectively) and non-family-member CEO for family firms (4.754 and 6.309 years for publicly listed and closely held family firm, respectively). Family member CEOs in publicly listed firms have longer tenure than closely-held family CEOs, probably because of the longer firm age of publicly listed family firms. Non-family-member CEO in the publicly listed family firm has the shortest tenure (4.754 years). This result implies that non-family-member CEOs in publicly listed family firms have higher performance-turnover sensitivity and suggests that these CEOs are not only monitored by the capital market, but also closely monitored by the controlling family. Mutual CEOs have longer tenure than those of non-family stocks and non-family-member CEOs in family firms. Beside family-member CEOs in family firms, mutual and reciprocal CEOs have the longest tenure.

Table 3 reports the annual turnover number and rate for the full sample and the sub-sample by the insurer's organizational form and ownership structure.⁴⁸ The annual turnover rate for the full sample is 6.66%, somehow lower than the results reported in extant literature that only focuses on publicly listed stock companies: 7.8% in Weisbach (1988), 12.88% in Kang and Shivdasani (1995), 9.3% in Denis and Denis (1995), 11.2% in Huson, Parrino and Starks (2001), and 9.55% in Fee and Hadlock (2004). My results indicate 578 turnovers, 239 turnovers of which have been identified as non-routine turnover. This fraction of non-routine turnover (41.35%) is somewhat larger than that identified by Warner et al. (1998), who use a sample of 279 management changes, 56 (20%) of which are forced turnover. Engel et al. (2003) estimate a sample of 1293

⁴⁸ Appendix Table 3 provides the results of full sample. The total observations declined from 9335 of the full sample to 8715 of current sample due to the missing data for ROA among other main control variables. Nevertheless, the pattern remains virtually unchanged.

turnovers, 171 (13.2%) of which are identified as non-routine. This might be due to the difference between my definition of routine and non-routine turnover and previous literature. I define the turnover as non-routine if the CEO does not stay in the company after stepping down and there is no explicit information that indicates he/she is not forced to leave the company. For example, CEOs that have a superior performance and leave the current firm because they have a better offer elsewhere are counted as non-routine turnover if they do not stay on the board after leaving the current company. If this information is unavailable, this CEO is defined as a non-routine turnover case in my sample. It is also possible that a retired CEO due to age or health reason is not on the board. If I cannot obtain exact information, they might also be misclassified as a non-routine turnover case. Unfortunately, due to my limited information about non-publicly listed companies, my non-routine turnover rate might be over-estimated.

Except for the other main business organizational form category, the highest turnover rate is publicly listed family firm with a non-family member CEO (14.21 percent), followed by publicly listed non-family firm (9.53 percent), closely held non-family firm (7.73 percent), reciprocal association (7.44 percent), closely held family firm with a non-family member CEO (7.37 percent), mutual firm (6.95 percent), publicly listed stock family firm with a family member CEO (3.70 percent), and closely-held family firm with a family member CEO (2.84 percent). This result suggests that mutuals have a lower turnover rate than non-manager-owned stock companies and family-member manager is most difficult to be removed probably due to their large power and possible entrenchment or higher willing to invest their long-term human capital in the company.

The next column presents the routine turnover rate by organizational form and ownership structure. Again, publicly listed family firm with a non-family member CEO has the highest routine turnover rate (8.20 percent) while publicly listed and closely held family firms whose CEOs are from the controlling family have the lowest annual routine turnover rate (2.65 percent and 2.26 percent, respectively).

The last column of Table 3 presents the non-routine turnover rate by organizational form and ownership structure. Consistent with the routine turnover results, publicly listed family firm with a non-family member CEO has the highest non-routine turnover rate (6.01 percent) while publicly listed and closely held family firms whose CEOs are from the controlling family have the lowest annual non-routine turnover rate (1.06 percent and 0.58 percent, respectively). This result implies that CEO turnover is less sensitive to firm performance when the CEO is from the controlling family. It also indicates that the monitoring from capital market and concentrated shareholder (holding family) provides the most effective corporate control mechanism. However, corporate control mechanisms cannot function well while the manager has relatively large power in the company. Compared to the difference in routine turnover rate, the difference in non-routine turnover rate between varying categories is much larger. The non-routine turnover rate of mutual insurance companies is about 45 percent lower than publicly listed non-family firms (2.53 percent versus 4.46 percent), while the difference for the routine turnover rate is only about 10 percent (4.42 percent versus 4.86 percent).

Table 4 documents the CEO succession type by organizational form and ownership structure.⁴⁹ Panel A provides the source of CEO succession conditional on a turnover

⁴⁹ We cannot find the source of all successions and code any unidentifiable successions as missing. Thus, the rate of inside succession and outside succession does not add up to one hundred percent.

event occurs. More information can be derived by comparing the ratio of inside and outside succession. For the full sample, the rate of inside succession to outside succession is about 1.6 to 1. If I count family succession as a kind of inside succession, the rate increases to 1.9 to 1.

For four types of family firms, I find that if there is a CEO succession, both closely-held and publicly listed family firm with a family member CEO almost always find a CEO from firm inside (94 percent and 86 percent, respectively) if I define the new CEO who is a family member as an insider. However, the inside succession and outside succession rate is very close for both closely-held and publicly listed family firm with a non-family member CEO. There is no family succession in these two categories. Actually, more than 50 percent successions are outside succession for both types of firms. It seems that the pattern of whether incumbent and incoming CEOs are a family member is quite stable in family firms.

It is of special interest to compare the difference between mutuals and reciprocals and non-family owned publicly listed stock firms since they represents the two extreme types of the spectrum of organizational form and ownership structure. For mutual insurance companies and reciprocals, approximately 30% of new CEOs are from outside and 70% are from firm inside.⁵⁰ On the other hand, about 40% of new CEOs are from outside and 60% are from firm inside in publicly listed non-family firms. The difference between inside successions and outsider successions is smaller for closely held non-family firms, 51 percent versus 46 percent.

Panel B provide the source of CEO conditional on routine turnover event while

⁵⁰ Reciprocal firms have very similar outside succession rate as mutuals. It is not surprising as they have similar characteristics of organizational form with mutuals.

Panel C provide the source of CEO conditional on non-routine turnover event. Inside successions dominate when routine turnover events occur. The rate of inside succession to outside succession is about 3 to 1. If I consider family succession as a kind of inside succession, the rate increases to almost 4 to 1. The other pattern of succession type conditional on routine turnover is similar to that of overall turnover. Thus, I focus on discussion on succession type conditional on non-routine turnover.

Consistent with Borokhovich, Parrino and Trapani (1996), the outside successions dominate when non-routine turnover events occur. The rate of inside succession to outside succession is about 1 to 1.2, compared to the rate (1 to 1.24) of Borokhovich, Parrino and Trapani (1996).⁵¹ In my sample, most firm types has more outside than inside successions conditional on the occurrence of non-routine turnover events except for family CEOs in both closely-held and publicly listed family firms. In these two types of companies, family members are still preferred even when the incumbent CEO is forced to resign. They do not have any outside successions even when non-routine turnover occurs. The result that family succession still dominates in non-routine turnover cases indicates the strong influence of family ownership. It is noteworthy that outside succession becomes as important as inside succession for mutual and reciprocals in non-routine turnover cases. Compared with routine turnover cases in which inside succession rate is 78.76% and outside succession rate is 19.69% for mutuals, the inside succession rate becomes 48.62% and outside succession rate becomes 51%, which is even larger than the inside succession. Reciprocals have 87.5% inside succession rate and 12.5% outside succession rate when the incumbent CEO is replaced voluntarily;

⁵¹ Borokhovich, Parrino and Trapani (1996) have 618 successions totally in their sample. New CEOs are promoted from inside the firm in 37 cases and hired from outside the firm in 46 cases when the incumbent CEO is forced to resign.

however, outside succession becomes as important as inside succession when non-routine turnover occurs.

5.2 Logistic Regression Results of Turnover Likelihoods

5.2.1 Logistic Regression Results for Full Sample

Table 5 presents logistic models relating the probability of turnover to firm performance, board and financial characteristics, and other potential determinants of CEO turnover decisions. Column (1) only includes firm performance variables. Column (2) adds firm specific financial and corporate governance variables while Column (3) adds organizational form and ownership structure dummy variables. I omit the dummy of the publicly listed non-family firms in the model and thus the publicly listed non-family firms serve as the base firm structure. Column (4) includes all dependent variables in the first 3 columns.⁵² The coefficient of ROA is negatively significant at the 1 percent level across the table except that it is significant at the 5 percent level in Column (1).⁵³ This indicates that there is a significantly negative relationship between firm performance and the likelihood of turnover, as in prior CEO turnover studies. This is consistent with most literatures (Weisbach, 1988; Evans, Nagarajan, and Schloetzer, 2010 among others).

To address the issue of aforementioned overestimation of non-routine turnover in my sample, I add an interaction term of the dummy for returns in the ninetieth percentile

⁵² We conduct the Hosmer-Lemeshow's goodness-of-fit test for all models. The p-values are 0.1558, 0.3087, 0.7673 and 0.8340 for four columns respectively, suggesting that the models fit reasonably well. We also ask Stata to output the results of correctly classified ratio. The values for Table 5 are all above 93%. Thus, the accuracy of the models is reasonable well. The tests for other tables in our paper do not suggest problems concerning the fit of the model either. To save the space, we do not report these results.

⁵³ I also use ROABTD, ROE and combined ratio to proxy for financial performance. The results remain quantitatively same.

and the ROA to capture the nonlinearity.⁵⁴ The interaction term of the dummy for returns in the ninetieth percentile and the ROA is always positive significant which indicates that CEOs with superior performance have a higher possibility of turnover.⁵⁵ It is dubious that the current firm board of directors would fire these superior performing CEOs. It is plausible that superior performing CEOs are more likely to be attracted by a better offer at other firms or government.

The industry performance (Median of industry ROA) is not significant at the conventional level in column (1) but positively significant at the 5 percent level in the second and fourth columns and positively significant at the 10 percent level in the third column. Thus, generally I find evidence supporting the argument that the board of directors can figure out that the firm performance is industry-wide or firm-specific. My results are not consistent with the finding that there are more turnovers when industry overall operational results are worse as indicated by Jenter and Kannan (2009). I also use the firm's ROA relative to the industry, i.e. firm's ROA minus the industry median ROA as the independent variable in my models although it is not reported here to save the space. The coefficients of industry adjusted ROA are significantly negative in all of the models and subsequent analysis indicates that board of directors generally can filter exogenous industry shocks to make the CEO dismissal decisions. My results is contrast to the argument that accounting-based performance evaluation is not used by firms for CEO turnover decision by Barro and Barro (1990) when they use bank industry stock market return as the industry performance. Engel et al. (2003) do not find the coefficient of

⁵⁴ Blackwell, Brickley and Weisbach (1994) apply this methodology in studying relationship between subsidiary banks and subsidiary performance although they do not find a statistical significant coefficient of the interaction term (footnote 17 on page 345).

⁵⁵ I also add a Top 90 Decile of ROA Dummy in all subsequent models. The dummy is generally not significant and the other results remain quantitatively same. I also try the interaction of ROA and Top 75 percentile which gives similar results.

industry performance significant with regard to accounting performance either.

Firm size is significantly positive across the models suggesting that larger firms are probably subject to closer regulatory and public scrutiny or have larger pools of general management talent readily available although I cannot clearly distinguish between these 2 explanations.⁵⁶ I add the leverage variable and it is not significant. This indicates that generally regulation is not an important factor in CEO turnover. It also suggests that the risk of the firm does not affect CEO turnover decision. A dummy variable for RBC falling below 250 percent is added rather than the leverage variable in the unreported results. The results are similar with that of the leverage variable but the observations are sharply reduced by half due to the direct availability of the RBC data for group companies. I also calculate the RBC ratio for group companies using the aggregation of individual affiliated companies RBC ratios. Again, the results are similar with that of the leverage variable.

The variables reflecting the business complexity (Fraction of net premium written from personal lines, fraction of net premium written from commercial long-tail lines, HHI of lines of business, and HHI of states of business) are not significant. Thus, I do not find evidence suggesting business complexity affect the board decision of CEO turnover decisions.

Neither board size nor dummy variable of board independence is significant at the conventional level suggesting that boards are not an important factor in CEO turnover decisions in the insurance industry. However, this result may be due to the difference of CEO turnover patterns between routine and non-routine turnover, which I will discuss in

⁵⁶ Parrio (1997) argues that the availability of qualified candidates is one of the important considerations of CEO turnover decisions.

detail in the next table.

The mutual dummy variable is significantly negative in column (3). Given that I use the publicly listed non-family firms as the base in the model, this result indicates that mutual firms have lower CEO turnover likelihoods than publicly listed non-family firms. This is consistent with Hypothesis 2. However, this effect no longer holds in column (4) when firm specific financial and governance variables are also included although the coefficient of mutual dummy is still negative. Since the effect of mutual dummy might be captured by these added variables, it is unclear that the negative effect of mutual dummy on turnover probability is due to the corporate governance or business characteristics associated with mutual firms. Closely held and publicly listed family firms with a family member CEO dummies are significantly negative in both column (3) and (4) at better than 1 percent level indicating fewer turnover events happen in these firms, probably due to the managerial ownership of the firm as suggested by Denis, Denis and Sarin (1997). Dummy of Reciprocal firm carries a negative sign as mutual dummy but have a smaller magnitude and is not significant. The results of F test suggest that coefficients between mutual dummy and reciprocal dummy are not equal, providing weak evidence of Hypothesis 3 stating that mutuals and reciprocals have different CEO turnover patterns. Dummy of other main business firm are significantly positive in both column (3) and (4). These firms experience more CEO turnover, partly due to the control by the parent firm.⁵⁷ The above effects might be different for the subsample of various organizational forms and ownership structures, which I will provide a more detail discussion shortly.

Table 6 presents the results of a multi-category logit model that uses dependent

⁵⁷ The higher probability of CEO turnover event in the insurance companies that is owned by other-industry parent may be due to the regular turnover in the organization.

variable categories of no turnover, routine turnover, and non-routine turnover with all independent variables of business characteristics, corporate governance and organizational forms and ownership structures used in Column (4) in Table 5. No-turnover is used as the base outcome and columns (1) and (2) contain the multinomial regression results for the outcomes of routine and non-routine turnover. Column (3) is copied from the logistic regression results with dependent variable as the turnover from Table 5 column (4) for comparison purpose.

ROA is not significant at the conventional level in the first column when routine turnover is used as the dependent variable. In contrast, a very significant effect of ROA at better than 1 percent level in the second column when non-routine turnover is used as the dependent variable shows strong sensitivity of non-routine turnover to firm performance, this result is consistent with the argument that the CEO is more likely forced to resign when the firm is poorly performing. It also indicates that the significant and negative coefficient of ROA in turnover regression shown in column (3) is driven by the non-routine turnover effect. Performance does not affect the CEO routine turnover decisions by the board of directors in the property-liability industry. It is noteworthy that the negative relationship between non-routine turnover and performance is biased downward considering routine turnover might be misclassified as non-routine turnover and non-routine turnover rate might be overestimated, as suggested by Evans et al. (2010). Thus, the real effect of performance on non-routine turnover might be stronger.

I find a significant positive coefficient for the interaction term of the dummy for returns in the ninetieth percentile and the ROA interaction term (with a larger coefficient) when non-routine turnover is used as the dependent variable in the second column. In

contrast, this interaction term is not significant when routine turnover is used as the dependent variable in the first column. One possible explanation is that I count some routine turnover events defined by extant literature (e.g., Weisbach, 1988; Warner et al., 1988) as non-routine turnover in my paper. The industry performance (median of industry ROA) has expected positive sign for both routine and non-routine turnover although it is not significant in the non-routine turnover column.

Firm size is positively significant only in routine turnover but not in non-routine turnover. This result is consistent with the finding of Warner, Watts, and Wruck (1988) that larger firms have higher “normal” management turnover. Board independence is significantly positive in the non-routine turnover regression and significantly negative in the routine turnover equation. This evidence suggests that higher fraction of outside members on the board favour the removal of under-performing executives in non-routine turnover decisions while reducing the chance of CEO routine turnover, consistent with the argument made by Weisbach (1988).

The mutual dummy has a significant negative coefficient in the non-routine turnover equation. Thus, mutuals seem to experience less non-routine turnover. Also, both publicly listed and closely-held family firms with a family member CEO dummy are significantly negative in the non-routine turnover equation indicating that normal succession is common in family firms. This may be due to their entrenchment characteristics or higher willingness to invest long-term human capital in the firm. I rerun the multinomial regression without firm organizational form and ownership structure dummies. The results are quantitatively similar and reported in Table 6-1.

5.2.2 Logistic Regression Results by Organizational Form and Ownership Structure

Table 7 presents evidence of turnover by organizational form and ownership structure. The first column reports the logistic regression results with turnover as the dependent variable while the second and third columns estimate the multinomial logistic regression models that use dependent variable categories of routine turnover (column 2) and non-routine turnover (column 3). No-turnover is used as the base outcome, as in Table 6. To save the space, I only discuss the results of mutuals and publicly listed non-family firms.

Panel A estimates the model for the mutual firm subsample. The coefficient of ROA is significantly negative in the turnover model. The effect seems to be driven by the negative relationship between firm performance and CEO turnover in non-routine turnover as shown in column (3). The coefficient of ROA in the routine turnover model has the expected negative sign but not significant. Thus, CEO turnover in mutuals are sensitive to accounting performance measures when the CEO is forced to resign.

Board independence is not significant at the conventional level in all columns. Thus I do not find evidence to support the argument of Mayers, Shivdasani, and Smith (1997) that board independence is an important internal control mechanism to compensate for the lack of external market for corporate control for mutuals. The higher fraction of outside board members in mutuals does not have a significant impact on the likelihood for both routine and non-routine turnover in mutuals after controlling firm performance.

Panel G presents the logistic results for the publicly listed non-family firms subsample. It is surprising to find that ROA is not significant in either routine or non-routine turnover model although the sign is negative as expected. One explanation

might be that the boards concern more about shareholders' wealth and assign more weights to stock market performance rather accounting performance in CEO removal decisions. For non-publicly listed firms, accounting performance is the only ready information to evaluate CEO performance although accounting data are subject to manipulation.

It is interesting to find that the coefficient of leverage is positively related to CEO non-routine turnover probability while negatively related to routine turnover probability in publicly listed non-family firms. High risky firms (with high leverage) are subject to more scrutiny from both capital market and regulators. This indicates that increasing risk of the firm leads to an unfavorable judgment of the incumbent CEO's performance and leads to more non-routine turnover when the insurance company is publicly held without any controlling family.

The log of board size is significantly positive in the routine turnover model. This finding might be due to the argument made by Yermack (1996) that the larger size of board may lead to less effective internal monitoring system due to the difficulty of effective communication and coordination among members on the board. The less effective internal monitoring system decreases the sensitivity of CEO turnover to firm performance and increases the probability that the CEO is replaced "voluntary". Board independence dummy is significantly negative in the routine turnover regression and significantly positive in the non-routine turnover equation for publicly listed non-family firms indicating an active role of the outside directors on the board, which is in contrast to the aforementioned mutual results in which board independence is not significant at the conventional level in all types of turnover. This result suggests that the function of

internal monitoring (board of directors) is more effective in publicly listed non-family insurance companies than mutuals although they have similar proportion of independent directors on the board.

I report the economic significance of the results for turnover, routine turnover and non-routine turnover in Table 8 based on the results in Table 6-1 for the full sample and Table 7 for subsamples for each type of organizational form and ownership structure. The results are comparable to those in prior studies of the performance-CEO turnover relation.⁵⁸ The coefficient of -4.122 on ROA (based on Table 6-1, column (3)) implies that the likelihood of manager turnover increases from 5.30 percent for a firm at the 90 percentile to 7.86 percent for an insurer at the 10 percentile of returns.⁵⁹ The economic significance is even larger in the non-routine turnover model (from the third column). The CEO non-routine turnover rate increases from 1.71 percent for a firm at the 90 percentile to 3.22 percent for an insurer at the 10 percentile of ROA. This is an about 90 percent increase in the non-routine turnover likelihoods.⁶⁰ ⁶¹ I then analyze the likelihoods of CEO turnover in the bottom deciles of ROA for both types of routine and non-routine turnover. For both closely held and publicly listed family firms, the probability of both routine and non-routine turnover is lowest when the poorly

⁵⁸ For example, Warner et al. (1998) find that the probabilities of a top manager turnover changes from 12.8 percent for a firm in the bottom decile of returns to 8.6 percent for a firm in the top decile. Barro and Barro (1990) find the turnover possibility of large public-traded bank executive increases from 0.003 at two standard deviations above average stock-price performance to 25.2 for two standard deviations below average stock-price performance. Blackwell et al. (1994) estimate that the likelihoods of manager change varies from 30.7 percent for a bank in the bottom decile of returns to 12.2 percent for a firm in the top decile.

⁵⁹ Medians of other independent variables are used in calculating the predicted turnover probability. Similarly, the likelihood of manager turnover increases from 4.75 percent for a firm at the third quartile to 6.29 percent for an insurer at the first quartile of returns.

⁶⁰ The mean of the annual non-routine turnover rate is 2.69 percent.

⁶¹ The economic significance is somehow smaller (but still quite significant) in the routine turnover model. The manager routine turnover rate increases from 3.30 percent for a firm at the 90 percentile to 4.10 percent for an insurer at the 90 percentile of ROA (an about 25 percent increase in the turnover rate).

performing CEO is from the controlling family than any other types of companies. One exception is routine turnover probability of closely held family firms with a family CEO is higher than non-family-owned closely held firms when firm performance is at 10 percentile (2.24 versus 1.33), indicating that family CEOs are more likely to choose “voluntarily” stepping down rather than “forced” turnover. Publicly listed firms generally have higher non-routine turnover probability than closely held companies when firm performance is not good.

The information obtained from Table 8 suggests that the turnover-performance sensitivity is generally consistent with the predicted pattern that poor performance increases the likelihoods of turnover for all firm subsamples although its magnitude varies across organizational forms and ownership structures. However, there are some exceptions in the case of routine turnover in closely held non-family firms, firms owned by other main industry and both closely held and publicly listed manager-owned family firms, in which the likelihood of routine turnover is lower in the 10th deciles of ROA than 90th deciles. For closely held non-family firms and firms owned by other main industry, this result may be driven by the higher possibility of non-routine turnover when the firm is in the 10th deciles of ROA. This implies that the CEOs from poorly performing closely held non-family firms and firms owned by other main industry are more likely to be forced to resign. The lower probability of routine turnover in manager-owned firms in the bottom deciles of return, both closely held and publicly listed, might be due to the entrenchment characteristics of controlling family since the likelihoods of routine and non-routine turnover are lower than other types of companies when the controlling family runs the company poorly. Table 8 shows that routine turnover probability for closely held

and publicly listed family firms whose CEOs are from the controlling families are 2.24 percent and 0.79 percent when the firm performance is in the 10 percentile of ROA. In the case of non-routine turnover, the results from Table 8 show that when ROA is at bottom 10 percentile, the likelihood that CEOs are forced to resign is lowest in family firms with a family member CEO (0.11 percent for closely held and 1.44 for publicly listed firms). The result generally supports Hypothesis 5 that among common stock insurance companies, family-member CEOs of a family firm have the lowest likelihoods of turnover and turnover-performance sensitivity.

I then compare the probability of routine and non-routine turnover for mutuals and publicly non-family firms. Overall, mutuals have higher routine turnover possibility and lower non-routine turnover possibility than publicly listed non-family firms when firm performance is bad. When firm performance is poor, mutuals tend to use more routine turnover to replace poorly performing CEO while publicly listed stocks tend to use more non-routine turnover to discipline the management. This result provides some evidence that mutuals have less effective corporate governance mechanisms than publicly listed stocks. The higher fraction of outside members on the board proposed by Mayers, Shivdasani, and Smith (1997) can not fully compensate the lack of capital market monitoring and the threat of takeover market due to the inalienability of mutual ownership.

Mayers and Smith (1988, 2002) argue that the costs of controlling managerial discretion problem in reciprocals are between mutuals and closely held stocks. I then compare the CEO turnover patterns of these three organizational forms. The results from Table 8 show that when ROA is at bottom 10 percentile, the likelihood that CEOs are

forced to resign is lowest in reciprocals (2.98 percent) and highest in closely held non-family firms among these three organizational forms. Mutuals (3.56 percent) have the one between reciprocals and closely held non-family firms.⁶² Thus, I do not find direct evidence supporting the argument made by Mayers and Smith that the costs of controlling managerial discretion problem in reciprocals are between mutuals and closely held stocks.

To test Hypothesis 4, I compare the CEO turnover patterns between closely held and publicly listed firms to see which type of these firms has stronger corporate governance mechanisms. The results from Table 8 show that when ROA is at bottom 10 percentile, the probability of non-routine turnover in publicly listed firms is 1.44 percent, 5.21 percent and 7.65 percent for family firms with family member CEOs, family firms with non-family-member CEOs and non-family firms, respectively. These values are larger than those of closely held firms: 0.11 percent, 3.27 percent and 6.47 percent for family firms with family member CEOs, family firms with non-family member CEOs and non-family firms, respectively. This result is consistent with Hypothesis 4 that proposes publicly listed stock insurers are more likely to remove CEO when the firm is poorly performing than closely held stock insurers.

I further compare the CEO turnover probability between non-family-member CEOs in family firms and CEOs in non-family firms to see if controlling families play the role as active monitors. Table 8 show that when ROA is at bottom 10 percentile, the likelihood that CEOs are forced to resign is highest in publicly listed non-family-owned firms (7.65 percent). For poorly performing publicly listed insurance stock companies, the likelihood of non-routine turnover for non-family-member CEOs in family firms increases 6.52

⁶² Note that I do not include the case of other main business owned firms in the comparison.

percent when firm performance moves from 90 to 10 percentile of ROA. This is higher than the increasing rate in non-family publicly listed firms (only 0.03). However, the increasing rate in likelihood of non-routine turnover is higher for CEOs in non-family firms (3.13) than the increasing rate for non-family-member CEOs in family firms (0.61) for closely held firms when firm performance moves from 90 to 10 percentile of ROA. The results indicate that both capital market and controlling families are important roles to discipline poorly performing CEOs in publicly listed companies. However, if there is only the presence of controlling families without monitoring from the capital market, the poorly performing non-family-member CEOs are less likely to be replaced probably due to the entrenchment characteristics of the family firms and the non-family-member CEOs' special relationship with the controlling family.

In Table 9 Panel A, I compare mutual and all stock insurance company by adding mutual dummy variable and the interaction terms of mutual dummy and firm performance (ROA) in mutuals and all stocks subsample. The coefficient of mutual dummy variable is significantly positive for turnover and routine turnover cases. The results suggest that there are more turnover and voluntary turnover events in mutuals than stocks. I also find the interaction terms of the mutual dummy and firm performance (ROA) are insignificant in all of turnover, routine turnover and non-routine turnover settings. This coefficient is insignificantly negative in routine turnover and positive in non-routine turnover model. Thus, I find weak evidence to support Hypothesis 1 that mutuals have lower probability of CEO turnover and lower sensitivity of CEO turnover to firm performance than stocks.

I then estimate several models comparing the effect of a few organizational forms

or ownership structures on performance-turnover link by excluding all other organizational forms or ownership structures in Table 9. I estimate models comparing mutuals and all publicly listed stocks in Panel B. The mutual dummy is significantly positive in routine turnover model. However, it is negative and significant in non-routine turnover model suggesting that there are fewer non-routine turnover events but more routine turnover events in mutuals. The interaction term of ROA and mutual is not significant across the models. However, its positive sign in non-routine model indicates that the sensitivity of CEO turnover to firm performance is weaker in mutuals than in publicly listed stocks.

Panel C focuses on firms with family firm ownership subsample. I would like to compare publicly listed versus closely held family firms. I expect that monitoring from the capital market will increase the performance-turnover link in publicly listed family firms. I add a dummy variable of publicly listed firm and its interaction term with ROA. In both turnover model and non-routine turnover model, the dummy variable of publicly listed firm is positive and significant at the 5 percent level indicating that publicly listed family firms have a higher probability of turnover, especially non-routine turnover than closely held family firm. Further, the interaction term with of publicly listed firm and ROA is negative significant in the non-routine model suggesting a stronger performance-non-routine turnover link in publicly listed family firms than closely held family firms. This result indicates that capital market play an effective role to suppress the expropriation of controlling families in publicly held family firms, compared with closely-held family firms.

Panel D presents the logistic results of all publicly listed stocks subsample,

including publicly listed family firm with either family-member CEO or non-family-member CEO and publicly listed non-family firm subsample. To differentiate three ownership structures, I add two dummy variables, dummy variable of publicly listed family firms with a family member CEO and with a non-family member CEO, and their interaction term with ROA. ROA is only significantly negative in the non-routine turnover model. The dummy variable for publicly listed family firms with a family member CEO is negative in all three models and significant in the turnover and non-routine turnover models indicating a strong family control of CEO position decreases the likelihood of CEO turnover. In contrast, the dummy variable for publicly listed family firm with a non-family member CEO is positive in all three models although not significant in all columns. This suggests that when the incumbent CEO is not a family member, they are not only subject to monitoring by the capital market as normal publicly listed non-family stocks; they might be also closely watched by the large shareholder. The existence of a controlling family monitoring seems to significantly increase the probability of CEO removal when the CEO is from outside the controlling family. The empirical evidence is consistent with Hypothesis 6-1.

Panel E provides the results for closely held firm subsample, including non-family owned and family owned closely-held firms. Similar as publicly listed firm analysis, I add two dummy variables for closely-held family firm with a family member CEO and with a non-family member CEO. The dummy variable for closely-held family firms with a family member CEO is negative in all three models and significant in the turnover and non-routine turnover models, while the dummy variable for closely-held family firm with a non-family member CEO is never significant across the table. The results indicate that

the family-member CEOs in closely-held family firm are less likely to be removed compared to those in closely held non-family firms, supporting Hypothesis 6-2.

Overall, I find family firms with a family member CEO have the lowest likelihood of turnover and non-routine turnover, and their sensitivity to firm performance is lowest. Except for family firms, the marginal increment of the likelihood for turnover and non-routine turnover due to firm performance is highest for publicly listed stock insurers indicating the publicly listed stock insurance companies have strongest sensitivity of CEO turnover to firm performance.

5.2.3 Firm Performance Surrounding CEO Turnover

I calculate firm performance (Industry median adjusted ROA in percentage) during years surrounding CEO turnover. The results are presented in Table 10. Generally speaking, CEO turnovers are preceded by poor firm performance and followed by improvement in performance, consistent with prior literature (e.g., Denis and Denis, 1995). Panel A shows that industry median adjusted ROA for the whole sample is -0.176 and -0.186 one year before and on the turnover year but 0.288 one year after CEO turnover. This phenomenon holds for both routine and non-routine turnover as shown in Panel B and C. Industry median adjusted ROA for the whole sample is -0.039 and -0.058 (-0.268 and -0.404)one year before and on the turnover year but 0.446 (-0.019) one year after CEO routine (non-routine) turnover. The results also hold for almost all firms in varying organizational forms and ownership structure. The only exception is for publicly-listed family firms with a family member CEO. This might partly due to the limited sample size (totally only 14 turnover events) for of publicly-listed family firms

with a family member CEO during my sample period.

5.3 Evidence on Successor Choice

I further classified both forced and voluntary turnover events into whether the new CEO is promoted from inside or hired from outside.⁶³ Table 11 presents coefficient estimates for bivariate probit models in which turnover decision and CEO succession choice are estimated jointly.⁶⁴ The results of turnover decision do not change materially with that reported in Table 5 when turnover decision is studied alone. Thus, I focus on discussion of CEO succession choice reported in column (1) and (3). In column (1), I treat the family succession as a special case of inside succession and include it into the model. In column (3), I exclude the family succession due to its special characteristic.

The dummy variable for the fraction of outside directors larger than 60 percent is positive and significant at better than the 1 percent level after controlling firm performance, operational variables and organizational form characteristics. The positive relation between the board independence and the likelihood of outside succession is robust to various specifications, e.g., drop organizational form dummies or operational variables, which is not reported to save space.⁶⁵ This result suggests that the likelihood that an incoming CEO from outside the firm increases with the percentage of outside directors, which is consisted with the findings of Borokhovich, Parrino and Trapani

⁶³ Parrino(1997) classified outsider CEO as one from another firm in the same industry and from another industry. In our case, dominant new CEOs are from insurance industry. Thus, I do not strictly follow his methodology.

⁶⁴ I also estimate bivariate probit models in which non-routine turnover decision and CEO succession choice are estimated jointly. The results of CEO succession choice remain virtually unchanged with those when turnover decision is used. The coefficients of non-routine turnover are quantitatively and qualitatively similar as those reported in Table 6.

⁶⁵ I also add an interaction term of ROA and the dummy variable of fraction of outside directors larger than 60 percent. The interaction term is not significant and the results of other variables do not change materially.

(1996).

ROA has the expected negative sign indicating a negative relationship between firm performance and outside succession although the coefficients are not significant for both full sample and sample excluding family succession. Thus, I only find weak evidence to support Hypothesis 7 stating that the likelihood of outside replacement is higher when a firm's performance is poor. Lack of significance might be due to the limited sample size. Regulation might also play a role in outside succession decision. Insurance is a highly regulated industry and the incoming CEOs generally need to have some insurance or financial services industry specific experience. This may limit the pool of available outside CEOs.

Mutual and reciprocal dummy variables are negative significant at better than the 1 percent level in both column (1) and (3). Thus, mutuals and reciprocals seem to be more likely to promote new CEO from inside the company. Family firms have lower chance to have outside appointment except publicly listed family firms with non-family-member CEO. This relation, though, is only significant in closely held family firms with a family member CEO dummy variable.

Overall, my results support the finding of Borokhovich, Parrino and Trapani (1996) that outside succession is preferred when a firm is poorly performing and the board is outsider-dominated. This is consistent with the argument of Fama and Jensen (1983) that outside board members have incentives to signal to the managerial market that they are good at decision control by appointing the best candidate to the CEO position. Thus, both the probability of non-routine turnover and outside appointment increases in poorly performing firms with higher fraction of outside members on the board. While past

literature (Borokhovich, Parrino and Trapani, 1996) suggests that in publicly listed firms, inside promotion harms the shareholders' benefit, especially when the CEO is forced to resign, I find the evidence that inside succession is prevalent in mutual insurance companies, no matter the turnover is routine or non-routine. This result is consistent with the argument of Mayers and Smith (1988) that mutuals have higher costs to control the interest conflicts between owners and managers, even there are more outside directors on the board. In family firms, appointing the new CEO from the controlling family is the most typical type of CEO succession.

5.4 The Effect of Turnover Probability on Firm Performance

I construct different sets of ROA model to assess the impact of turnover on a firm's performance. ROA at the year t is used as the dependent variable and I report the results using the control variables which are also at the year t in Table 12-1. First, I establish an OLS regression model of ROA following Elango, Ma, and Pope (2008) without including any turnover variable. The result is shown in column (1). Second, I add one dummy variable of turnover at year t in the OLS model in column (1) and the result is shown in column (2). To address the issue of endogeneity, I use the predicted turnover probability at year t instead of the dummy variable of turnover. I obtain the predicted turnover probability at year t by using two instrumental variables: board size and the dummy variable of board independence equal to one if fraction of outside directors > 0.6 . For IV methods, I apply two STATA codes ("treatreg" and "ivregress") suggested by Cameron and Trivedi (2009) and the results are generally consistent. According to Cameron and Trivedi, both methods have benefit and cost. The "treatreg" code "explicitly account for

the binary nature of the endogenous regressor by changing the first-stage to be a latent-variable model (page 186).” The benefit of “treatreg” code is thus a possible “increase precision of estimation” with the cost of “a greater chance of misspecification error (page 188).” Column (3) and (4) report the results using “treatreg” and “ivregress” code in Stata, respectively.

Alternatively, I use lagged dummy variable for turnover and lagged predicted turnover probability (at year $t-1$) to re-estimate the model and report the results in Table 12-2.

In both tables, both the coefficients of dummy variable for turnover (column (2)) and the predicted turnover probability at t year (column (3) and column (4)) are generally insignificantly positive (except for column (4) in Table 12-2), which weakly supports the argument that the pressure of turnover faced by the CEO improve a firm’s financial performance.

My ROA model results with regard to other control variables are generally consistent with Elango, Ma, and Pope (2008) with some exceptions. The comparison of the ROA results of the two studies is discussed as following. Because results of Table 12-1 and Table 12-2 are generally consistent, I focus on discussing the results of Table 12-1 thereafter.

Production diversification: Elango, Ma and Pope (2008) tests two alternative hypotheses about the impact of diversification on firm performance: diversification discount hypothesis and economies of scope hypothesis. The coefficients of production diversification are significantly negative in various settings of their model. This result is consistent with mine in ROA regression models, in which the coefficient of production

diversification is significantly negative.

Geographic diversification: Mayers and Smith (1988) argue that the higher level of managerial-discretion costs of geographic diversification implies lower levels of financial performance due to higher monitoring costs. Conversely, higher degree of geographic diversification also incurs the risk-reduction benefits. The coefficient of geographic diversification is significantly negative in Elango, Ma, and Pope (2008) which supports the argument by Mayers and Smith (1988). However, the coefficient of geographic diversification in my model is significantly positive which supports the argument of risk-reduction benefits.

The percentage of business in commercial lines: Elango, Ma, and Pope (2008) include the percentage of business in commercial lines to control the effect of the insurer's nature of the business on the firm's performance. Their coefficient of this control variable is significantly positive. I use percentage of business in personal lines and find a negative coefficient which is consistent with their finding.

Firm size: Elango, Ma, and Pope (2008) include firm size as a control variable. The coefficient of size is negative but insignificant, suggesting that smaller insurers may have a relatively stronger financial performance. In contrast, I find a positive relationship between firm size and performance.

Affiliation: The negative relationship between performance and group affiliation is suggested by the literature (Cummins and Sommer, 1996, Sommer, 1996, and Liebenberg and Sommer, 2007, Elango, Ma, and Pope, 2008). This is probably due to the hypothesis that the price charged by independent individual companies can be higher than an insurer group, all else equal. Policyholders value more for an option on a portfolio (a single

company) than a portfolio of options (an insurer group) although shareholders have opposite preference. Thus, policyholders should be willing to pay more for the unaffiliated insurer's product and firm performance of a single company might be better than a group company. The negatively significant coefficient of group dummy variable in my ROA model supports this argument while Elango, Ma, and Pope (2008) find marginally positively significant (at the 10 percent level) coefficient of group dummy in their ROA model.

Organizational Structure: The interest conflicts among owner, manager, and policyholder within insurers with various organizational structures and their relative strength to control the agency problems may have different implication for a firm's financial performance. Thus, the need to control for an insurer's organizational structure is evident. Moreover, Cummins, Weiss, and Zi (1999) found evidence in support of the *expense preference hypothesis* that suggests mutuals employ a higher cost structure than do stock firms. Elango et al. find that stock insurers have a higher ROA than do mutual insurers. In my ROA model, the dummy variable of mutual is negative although it is not significant. This result indicates the financial performance of mutuals may be worse than stocks.

Distribution System: The dummy variable for independent agency is included to control the effect of costs and efficiency of distribution system on firm performance. Berger, Cummins, and Weiss (1997) find the relatively higher quality services provided by independent-agency insurers. Elango, Ma, and Pope (2008) find an *insignificant* coefficient of independent agency dummy in ROA model while I find a marginally significantly negative coefficient.

Risky Investments: Elango, Ma, and Pope (2008) find a significantly positive relationship between firm performance (ROA) and the percentage of investments in risky investments. In my ROA model, however, the coefficient of risky investments is negatively significant. The rationale is that risky investments are associated with greater returns but also greater volatility in such returns. My results might be due to the different sample period with that of Elango, Ma, and Pope (2008).

Leverage: Colquitt and Hoyt (1997) indicate that higher leverage increases the firm's probability of financial distress and reduces the market value of the firm. Both my study and Elango et al. find negatively significant coefficient of leverage, supporting the argument by Colquitt and Hoyt (1997).

5.5 More Robustness Tests

5.5.1 The Aggregated Individual Subsidiaries Data

It is arguably that the earlier 1990s' NAIC database might have reporting errors for the group companies' information. To address this concern, I use the aggregated financial data of all individual subsidiaries within the group instead of reported group data in the NAIC database for group companies over my sample period. In other words, I find all the individual companies affiliated to the same group and add up these firms' amount to get the group aggregated data.⁶⁶ My results of all models using the aggregated individual

⁶⁶ There are three concerns related to this method. First, I acknowledge that there might be reinsurance among groups and some financial data might be double counted. However, I cannot find more detail information to remove this double counting. Nevertheless, I do not think that this will seriously affect my results because reinsurance practice among groups does not affect significantly the variables used in my analysis. Second, subsidiaries of some large insurance groups are reported as sub-groups in NAIC database. This exacerbates the concern of over-counting the CEO turnovers. Third, it is possible that, for example, a group has 15 subsidiaries and only 14 of them have information in the NAIC database. However, insurers that are not included in the NAIC database are typically single-state insurers and were likely to have been excused by a state regulator from filing an Annual Statement because they had few assets and/or liabilities,

subsidiaries data remain virtually unchanged with those of using group data. I report the replicated Table 6 using the aggregated individual subsidiaries data in Appendix Table 6-A1.

5.5.2 Testing the Regulatory Effect in Insurance

Although I try to capture the effect of regulation on turnover decisions in the insurance industry and include leverage in the analysis, it is a too broad proxy. Thus, I adopt the Risk Based Capital ratio (RBC) as an explicit proxy for the regulatory effect.⁶⁷ I tried several versions of robustness tests: (1) adding the RBC ratio, (2) adding a dummy variable for RBC falling below 200 percent, which is the regulatory threshold required by the NAIC (falling below 200 percent will trigger regulatory intervention), (3) adding a dummy variable for RBC falling below 250/300 percent to capture the effect that some insurers might consider a safety capital margin. One concern is that group companies have never report RBC data in the NAIC database. Actually, the RBC requirements focus on individual company regulation only. To calculate the RBC ratio of group companies, I first add up the total adjusted capital (TAC) and risk based capital (RBC) of all individual subsidiary companies within the group and then divided the aggregated TAC by aggregated RBC to get the “aggregated” RBC ratio for group companies. To be consistent, I also use aggregated individual subsidiaries data for all other group financial information.

were undergoing liquidation, or were in the process of being sold (Cummins, Grace, and Phillips, 1999). Thus, the effect of missing firm information on overall results should be minimized.

⁶⁷ There are some significant outliers. For example, the largest number is 1.56294E+04 while the lowest is -27.8421. To remove the effect of outliers, I winsorize the RBC ratio at the 1 percent and the 99 percent level. The results remain virtually unchanged if we drop these outliers. Also, the distribution of the RBC ratio is highly skewed. We use the regulatory threshold (200 percent level) as the cutoff rate to create a dummy variable, reflecting the pressure of regulatory intervention if the insurer’s RBC ratio falls below this specific rate.

There are 8 turnover events (out of 166 firm observations) for firms with the RBC ratio below 200 percent level. For firms with the RBC ratio above 200 percent, there are 425 turnover events out of 6543 observations. The RBC ratio or the regulatory dummy has never been significant in all models and subsamples, indicating RBC regulatory effect do not have significant impact on CEO turnover decision. I also try other dummy variables when firm/group's RBC ratio is below 250 percent, 300 percent level. None of the dummy variable is significant in any models. The *p-values* are between 0.13 and 0.78. The coefficients of other variables remain quantitative similarly. I still cannot exclude the other regulatory effect on CEO turnover decision though.

5.5.3 On the Consistency of the Methodology (Logistic and Probit Model)

In the CEO turnover (routine and non-routine turnover) regression models, logistic (multi-logistic) regressions are used following most previous economics and finance literature. However, in the CEO inside and outside turnover models, I apply the bivariate probit model, following Borokhovich, Parrino and Trapani (1996). It is arguable that it would be better to keep the methodology consistent throughout the paper and use the bivariate logistic model on the choice of inside/outside successions. Unfortunately, the bivariate logistic is not available for either SAS or STATA. I thus redo the whole analysis with the probit model rather than logit model. Further, I compute robust standard errors clustered at the firm level in all regressions, following Bushman, Dai and Wang (2010). Results remain virtually similar with the logistic model. I report the replicated Table 6 using the probit model at Appendix Table 6-A2.⁶⁸

⁶⁸ The only change is that the coefficient of Median of Industry ROA turns positive and significant at better than the 10 percent level.

5.5.4 External Turnover Due to M&A, Regulatory Actions and Foreign Firms

Following Kaplan and Minton (2008), I consider the CEO to have been replaced in a merger if her company is taken over by another company and she is not CEO of the combined company. As noted in footnote 18, there are 298 firms being acquired between 1993 and 2006. Several firms experience multiple events and it leads to 350 merger and acquisition events during my sample period. CEO of acquired firm has a very high turnover rate at 64.57 percent, as expected. Interestingly, 38.50 percent of replaced CEOs remain on the board of merged firm suggesting new firms still rely on these leaving CEOs' experience to some extent. Due to the special characteristics of turnover associated to mergers and acquisitions, I do not include these firms in my analysis. Further, Kaplan and Minton (2008) find that CEO turnover due to a merger or bankruptcy is not related to firm performance.

Also, 109 insurers are subject to some regulatory actions during my sample period. Following extant insurer insolvency literature (Cummins, Harrington, and Klein, 1995; Cummins, Grace, and Phillips, 1999), I define any firm subject to regulatory actions when it was first subject to any formal public state regulatory order. Formal state regulatory proceedings include conservation of assets, rehabilitation, receivership, or liquidation. Generally speaking, CEO naturally steps down in a liquidation event because the firm no longer exists. In some cases, CEO remained on her place after the firm was conserved or rehabilitated but the firm was actually under regulatory control. In most cases, I cannot find information after the firm was announced to be under regulatory actions. Thus, I do not include any firms involved in regulatory action in the analysis.

Finally, Information is available for 70 insurers owned by foreign parents during my sample period. The turnover rate of these foreign firms is 17.24 percent and most turnovers are non-routine turnover (12.07 percent) based on my definition of non-routine turnover (whether leaving CEO remains on the firm board). However, the extremely high percentage of turnover (non-routine) turnover rate might be due to the foreign firm characteristics rather than performance. For example, the Nissan Fire and Marine Insurance Company might have a corporate policy to replace CEO of its US subsidiary company every three years. After three years tenure at US branch, the subsidiary CEO will be recalled back to their headquarters at Japan. This CEO's future in the company might partly depend on her performance in US subsidiary. However, CEO turnover probability at US subsidiary company is apparently unrelated to her performance. Further, the performance of the subsidiary of a multinational company is partly depend on its parent company's global strategy and profit transfer internally might also distort subsidiary profit reported on financial statements. Thus, I do not include foreign insurers in the main sample.

5.5.5 On the Endogeneity of CEO Turnover and Firm Performance

Endogenous issue has always been a concern in empirical study. In this research, endogeneity will be presented if some underlying factors affect both firm performance and CEO turnover probability simultaneously. I have been careful in minimizing the potential endogenous issue. First, the lower firm performance might lead to a higher possibility of CEO turnover. Alternatively, the possibility of CEO turnover might make market expect a high performance after the turnover event if the incoming CEO has an

assuming better ability to improve the firm performance. This is especially true if the market return (based on stock price) is used to proxy for firm performance. In this study, I apply the accounting return rather than the stock return. Thus, the possibility of the endogeneity of CEO turnover and firm performance is greatly reduced.

Second, I apply the lagged insurer performance to predict turnover event. Lagged values of the endogenous variables would suppose to be naturally exogenous. This procedure is supposed to greatly remove the possible simultaneous concern between the firm performance and the possibility of CEO turnover. It is unlikely that the probability of turnover at year t will affect the firm performance in year $t-1$. Thus, instead of being two-way direction, causality is generally one way here: from firm performance in year $t-1$ to the chance of turnover in year t .

Although I use lag of the firm performance to predict CEO turnover, the endogenous issue might still exist. For example, if firm performance is below the expectation of the board in year $t-2$, the CEO might feel the pressure from the board or face the increasing possibility of being replaced in year $t-1$ or subsequent years. It is possible that CEO will work harder in year $t-1$ or subsequent years to improve the firm performance. Thus, when I use the possible improved firm performance in year $t-1$ to predict CEO turnover in year t , it is plausible to argue that the CEO's endeavor improve the firm performance and lower the probability of turnover in the subsequent year(s). However, the underlying driving factor might actually be the high CEO turnover probability in year $t-1$ which in turn is due to the poor performance in previous years. At least, there might be a simultaneous relationship between the CEO turnover probability and firm performance if CEOs will work harder after previous year's poor firm

performance (and relax a little bit after previous year's good firm performance).

Following Cummins, Phillips and Weiss (2001), I employ two standard methods to address this endogeneity issue, based on instrumental variables (IV) and inverse Mill's ratios (IM). I use three additional variables as the instrumental variables for ROA. The three variables are insurer's group affiliation dummy equals to one if affiliated to a group, insurers' investment in stocks, mortgages and real estates, and agent dummy variable equals to one if firms' distribution system is independent agent or broker. Elango, Ma and Pope (2008) find that they are significant in predicting insurer ROA. The Hausman's specification test of IV approach and the inverse Mill's ratio test results indicate that endogeneity between turnover and performance is not a concern in my study.⁶⁹ For comparison purpose, I run the estimation using both the IV and IM methodology and report the results for both tests for turnover model (column 4 in Table 5) at the Appendix Table 5-A. I replicate the results of column (4) in Table 5 in the first column. The firm years using either IV or IM methodology are reduced somewhat because I have only access to firm distribution system data after 1995. It is noteworthy that the inverse Mill's ratios method provides more consistent results to the original results. Especially, the coefficient of ROA is negative and significant at better than 5 percent level. The coefficient of ROA is negative but not significant in the test using instrumental variables. Overall, it seems that my results are robust to the endogeneity issue.

5.5.6 Actual versus Predicted Turnover Based on the Logistic Regression Model

⁶⁹ For example, I apply the tests on Table 6 column 4 for turnover model. Wald test statistic of exogeneity using instrumental variable method is 0.08 and the p value is 0.7742. The Z-statistic based on inverse Mill's ratio method is 0.65 and p value is 0.519. Neither test statistics reject the hypothesis of (no) endogeneity in our study.

I compare the actual and the predicted turnover rate based on the logistic regression model of in Table 5 (Column 4) to examine how well my model does in actually predicting CEO turnover. I first use 50% as the cutoff point. I first sort the observations from large to small based on the predicted turnover probability. The first 4174 observations are predicted to be turnover while the last 4174 ones as no turnover, based on the logistic model. The prediction is compared to the real happening of turnover events. The results are presented in Panel A of Table 13. Given the actual turnover events occur, the logistic regression model predicts 66% of these turnover events correctly and misclassifies 34% as no turnover. I also choose the actual turnover rate (6.62%) as the cutoff probability of turnover and the results are presented in Panel B of Table 13. If the probability of turnover is 6.62% that would be cutoff to use, first 533 observations would be classified as turnover and the remaining 7795 ones as no turnover, after sorting the observations from large to small based on the predicted turnover probability. The model predicts 16% of turnover correctly. This may be due to the high probability of no turnover (93.38%) as the cutoff probability.

CHAPTER 6

CONCLUSION

This paper provides evidence on how organizational form and ownership structure affect corporate governance mechanisms in insurance companies. I examined CEO turnover in insurance companies with various organizational forms and ownership structures. I found that the association between the likelihood of CEO turnover and firm performance is inversely related, and the outside succession dominates when non-routine turnover occurs. I also found that the CEO turnover rate and its sensitivity to performance change with various organizational forms and ownership structures.

The main findings of this paper are the following: First, poorly performing family-member CEOs in both closely held and publicly listed family firms are the most difficult to remove and their successors are mostly from the controlling family. This finding provides some evidence that controlling shareholders are entrenched.

Second, poorly performing non-family-member CEOs in publicly listed family firms have the highest likelihood both routine and non-routine turnover. This suggests the effectiveness of monitoring from capital market and controlling shareholders. It also suggests that when the controlling shareholders' interests are more aligned with those of minority shareholders, the quality of corporate governance mechanisms improves to some extent.

A third finding is that mutuals and reciprocals have lower likelihoods of CEO turnover and turnover-performance sensitivity than publicly listed non-family firms. Also their new CEOs more likely come from inside the company in both routine and non-routine turnover. This result suggests that a higher proportion of outside members on

the board in mutuals cannot fully compensate for the lack of monitoring from the capital market and threat from the takeover market. Finally, when firm performance is poor, the likelihood of non-routine turnover is higher in publicly listed than in closely held insurance companies. This finding suggests the importance of the capital market in improving the quality of corporate governance.

The quality of an insurer's corporate governance mechanisms potentially affects the policyholders' rights because there are both owner/manager and owner/policyholder conflicts of interest in an insurance company. My findings carry implications for the insurance regulators regarding how to protect policyholders' rights by improving the quality of corporate governance mechanisms in an insurance company.

A large body of research literature studies many aspects of CEO turnover in publicly listed companies. My study contributes to this literature by exploring the pattern of CEO turnover in both publicly and non-publicly listed insurance companies. One limitation in my study is the availability of data. Unlike publicly listed companies, which are required to reveal certain information to the public, non-publicly listed companies have limited access to information. The information available allows me to examine the impact of organizational forms and ownership structures on the likelihood of CEO turnover and its sensitivity to performance in the insurance industry. However, more information is required to further explore the casual relationship between organizational forms and ownership structures and the likelihood of CEO turnover and its sensitivity to performance. Additional research on this correlation is suggested. Furthermore, since my study only focuses on the insurance industry, which is highly regulated, whether or not my results can be generalized to other industries remains a question. Similar studies on

other non-regulated industries are needed to establish the research base about the patterns of CEO turnover in companies with various organizational forms and ownership structures.

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Appendix Table 1
Pairwise correlation among all variables in the turnover model

	Turnover	ROA	Firm size	HHI-business	HHI-states	Proportion-Personal
Turnover	1					
ROA	-0.014 (0.19)	1				
Firm size	0.053 (0.00)	0.028 (0.01)	1			
HHI-business	-0.024 (0.03)	0.073 (0.00)	-0.338 (0.00)	1		
HHI-states	-0.043 (0.00)	-0.018 (0.09)	-0.511 (0.00)	0.208 (0.00)	1	
Proportion-personal	0.007 (0.519)	-0.155 (0.00)	0.298 (0.00)	-0.294 (0.00)	0.032 (0.004)	1
Proportion-commercial long-tail	0.011 (0.29)	0.065 (0.00)	-0.05 (0.00)	0.357 (0.00)	-0.178 (0.00)	-0.153 (0.00)
Board size	0.033 (0.002)	-0.0004 (0.97)	0.295 (0.00)	-0.128 (0.00)	-0.058 (0.00)	0.231 (0.00)
Outside director	0.026 (0.013)	-0.023 (0.029)	0.256 (0.00)	-0.119 (0.00)	-0.028 (0.01)	0.219 (0.00)
Median ROA	0.014 (0.209)	0.187 (0.00)	-0.051 (0.00)	0.012 (0.29)	0.04 (0.00)	-0.013 (0.239)
Leverage	0.024 (0.02)	-0.180 (0.00)	0.563 (0.00)	-0.087 (0.00)	-0.178 (0.00)	0.411 (0.00)
Mutual	0.012 (0.24)	-0.052 (0.00)	-0.053 (0.00)	-0.204 (0.00)	0.204 (0.00)	0.174 (0.00)
Family CEO (Close)	-0.077 (0.00)	-0.01 (0.37)	-0.254 (0.00)	0.203 (0.00)	0.093 (0.00)	-0.248 (0.00)
Non-family CEO (close)	0.007 (0.50)	0.039 (0.00)	-0.077 (0.00)	0.069 (0.00)	0.046 (0.00)	-0.073 (0.00)
Closely-held company	0.0176 (0.09)	0.014 (0.20)	0.024 (0.03)	0.113 (0.00)	-0.058 (0.00)	0.041 (0.00)
Family CEO (Public)	-0.026 (0.012)	0.052 (0.00)	0.168 (0.00)	-0.064 (0.00)	-0.193 (0.00)	-0.009 (0.39)
Non-family CEO (Public)	0.046 (0.00)	0.011 (0.29)	0.170 (0.00)	-0.062 (0.00)	-0.168 (0.00)	0.031 (0.003)
Publicly-listed company	0.026 (0.01)	0.006 (0.55)	0.319 (0.00)	-0.094 (0.00)	-0.264 (0.00)	-0.002 (0.84)
Reciprocal	0.007 (0.47)	-0.009 (0.38)	0.033 (0.002)	0.064 (0.00)	0.021 (0.06)	0.084 (0.00)
Other main business	0.056 (0.00)	0.034 (0.002)	-0.013 (0.22)	0.029 (0.01)	-0.088 (0.00)	-0.016 (0.14)

	Proportion-commercial long-tail	Board size	Outside director	Median ROA	Leverage	Mutual
Turnover						
ROA						
Firm size						
HHI-business						
HHI-states						
Proportion-personal						
Proportion-commercial long-tail	1					
Board size	0.062 (0.00)	1				
Outside director	0.001 (0.923)	0.521 (0.00)	1			
Median ROA	-0.002 (0.85)	0.013 (0.22)	-0.008 (0.46)	1		
Leverage	0.088 (0.00)	0.155 (0.00)	0.162 (0.00)	-0.052 (0.00)	1	
Mutual	-0.135 (0.00)	0.287 (0.00)	0.357 (0.00)	0.012 (0.252)	-0.065 (0.00)	1
Family CEO (Close)	-0.006 (0.60)	-0.357 (0.00)	-0.396 (0.00)	-0.04 (0.71)	-0.085 (0.00)	-0.467 (0.00)
Non-family CEO (close)	-0.082 (0.00)	-0.242 (0.00)	-0.228 (0.00)	-0.002 (0.88)	-0.034 (0.001)	-0.227 (0.00)
Closely-held company	0.131 (0.00)	0.072 (0.00)	0.054 (0.00)	-0.007 (0.53)	0.032 (0.003)	-0.287 (0.00)
Family CEO (Public)	0.047 (0.00)	0.043 (0.00)	-0.039 (0.00)	0.009 (0.403)	0.050 (0.00)	-0.20 (0.00)
Non-family CEO (Public)	0.021 (0.05)	0.023 (0.03)	-0.044 (0.00)	-0.017 (0.12)	0.061 (0.00)	-0.141 (0.00)
Publicly-listed company	0.088 (0.00)	0.088 (0.00)	0.102 (0.00)	-0.014 (0.19)	0.139 (0.00)	-0.238 (0.00)
Reciprocal	0.026 (0.02)	0.049 (0.00)	0.068 (0.00)	0.006 (0.55)	0.052 (0.00)	-0.201 (0.00)
Other main business	0.081 (0.00)	-0.062 (0.00)	-0.051 (0.00)	0.001 (0.90)	0.015 (0.16)	-0.152 (0.00)

	Family CEO (Close)	Non-family CEO (close)	Closely-held company	Family CEO (Public)	Non-family CEO (Public)	Publicly-listed company
Turnover						
ROA						
Firm size						
HHI-business						
HHI-states						
Proportion-personal						
Proportion-commercial long-tail						
Board size						
Outside director						
Median ROA						
Leverage						
Mutual						
Family CEO (Close)	1					
Non-family CEO (close)	-0.119 (0.00)	1				
Closely-held company	-0.150 (0.00)	-0.073 (0.00)	1			
Family CEO (Public)	-0.104 (0.00)	-0.051 (0.00)	-0.064 (0.00)	1		
Non-family CEO (Public)	-0.074 (0.00)	-0.036 (0.001)	-0.045 (0.00)	-0.032 (0.002)	1	
Publicly-listed company	-0.125 (0.00)	-0.061 (0.00)	-0.077 (0.00)	-0.053 (0.00)	-0.038 (0.00)	1
Reciprocal	-0.105 (0.00)	-0.051 (0.00)	-0.065 (0.00)	-0.045 (0.00)	-0.032 (0.002)	-0.054 (0.00)
Other main business	-0.080 (0.00)	-0.039 (0.00)	-0.049 (0.00)	-0.034 (0.001)	-0.024 (0.02)	-0.041 (0.00)

	Reciprocal	Other main business
Turnover		
ROA		
Firm size		
HHI-business		
HHI-states		
Proportion-personal		
Proportion-commercial long-tail		
Board size		
Outside director		
Median ROA		
Leverage		
Mutual		
Family CEO (Close)		
Non-family CEO (close)		
Closely-held company		
Family CEO (Public)		
Non-family CEO (Public)		
Publicly-listed company		
Reciprocal	1	
Other main business	-0.034 (0.001)	1

Appendix Table 2

Descriptive statistics of turnover by organizational form and ownership structure for full sample

This table reports summary statistics for our sample during 1993-2006. The table presents summary statistics of corporate governance variables by organizational form and ownership structure, respectively. Each year issue of Bests Insurance Reports gives the corporate governance variables from the mid of the last year till the mid of the current year of publication. Mutual is a dummy variable equal to one if the firm is a mutual firm and zero otherwise. Closely-held firm is a stock firm not publicly listed, including three types: EOCF, NEOCF and Closed. EOCF is a dummy variable equal to one if the firm is a closely-held family firm with CEO as a family member, and zero otherwise. NEOCF is a dummy variable equal to one if the firm is a closely-held family firm with CEO as a non-family member, and zero otherwise. Closed is a dummy variable equal to one if the firm is a diffused-owned closely-held stock firm and zero otherwise. Publicly listed firm is a stock firm publicly listed, including three types: EOPF, NEOPF and NonFamilyPF. EOPF is a dummy variable equal to one if the firm is a publicly listed family firm with CEO as a family member, and zero otherwise. NEOPF is a dummy variable equal to one if the firm is a publicly listed family firm with CEO as a non-family member, and zero otherwise. NonFamilyPF is a dummy variable equal to one if the firm is a widely held (non-family-owned) publicly listed firm. Reciprocal is a dummy variable equal to one if the firm is a reciprocal or reciprocal. Other is a dummy variable equal to one if the firm is a risk retention group or ultimately owned by a public parent firm not in the insurance industry. Board Size is the number of the board of directors. Board Independence is the proportion of independent board of directors. Tenure is the total years CEO remaining in the current CEO position.

Variable	Observation	Board Size				Board Independence			
		mean	median	min	max	mean	median	min	max
Full sample	9335	9.250	9.000	0.0 0	39.0 0	0.600	0.667	0.0 0	1.00
Mutual	4398	10.28	9.000	3.0 0	39.0 0	0.712	0.733	0.0 0	1.00
Non-family-owned closely held firms	790	10.76	9.000	2.0 0	32.0 0	0.660	0.778	0.0 0	1.00
Closely-held family firms, CEO is a family member	1833	6.670	6.000	0.0 0	18.0 0	0.341	0.364	0.0 0	1.00
Closely-held family firms, CEO is not a family member	509	5.754	5.000	2.0 0	13.0 0	0.282	0.250	0.0 0	0.85
Publicly-listed family firms, CEO is a family member	399	9.758	9.000	4.0 0	20.0 0	0.589	0.600	0.0 0	0.91
Publicly-listed family firms, CEO is not a family member	204	9.417	9.000	5.0 0	20.0 0	0.565	0.571	0.1 1	0.87
Non-family-owned publicly listed firms	560	10.14	10.000	4.0 0	18.0 0	0.733	0.769	0.1 2	0.94
Reciprocal	405	10.38	9.000	2.0 0	26.0 0	0.737	0.846	0.0 0	1.00
Other Main Business	237	7.506	7.000	3.0 0	15.0 0	0.499	0.571	0.0 0	1.00

Variable	Observation	CEO Tenure			
		mean	median	min	max
Full sample	9335	8.481	7.000	0.00	51.00
Mutual	4398	7.782	6.000	0.00	37.00
Non-family-owned closely held firms	790	6.316	5.000	0.00	26.00
Closely-held family firms, CEO is a family member	1833	11.53	10.000	0.00	44.00
Closely-held family firms, CEO is not a family member	509	6.114	5.000	0.00	21.00
Publicly-listed family firms, CEO is a family member	399	18.04	17.000	0.00	51.00
Publicly-listed family firms, CEO is not a family member	204	4.760	3.500	0.00	17.00
Non-family-owned publicly listed firms	560	6.450	5.000	0.00	31.00
Reciprocal	405	7.094	6.000	0.00	28.00
Other Main Business	237	4.439	4.000	0.00	18.00

Appendix Table 3

Descriptive statistics of turnover type by organizational form and ownership structure for full sample

This table reports summary statistics for our sample during 1993-2006. The table presents the observation number of turnover event, routine turnover event and non-routine turnover event, by organizational form and ownership structures, respectively. The turnover rates are given in parentheses. Routine turnover is defined as any changes in the CEO of the firm if the departing CEO remains in the company (generally on the board of directors) for more than 2 year after stepping down, or the explicit information about the turnover is available indicating reasons related to death or illness and those for which the stated reason for turnover is retirement or normal succession. All other turnovers are defined as non-routine turnover. The organizational form variables are as defined in Table 2.

Variable	Number of Observation	Turnover	Routine Turnover	Non-Routine Turnover
Full sample	9335	611 (6.55%)	360 (3.86%)	251 (2.69%)
Mutual	4398	302 (6.87%)	193 (4.39%)	109 (2.48%)
Non-family-owned closely held firms	790	63 (7.97%)	27 (3.42%)	36 (4.56%)
Closely-held family firms, CEO is a family member	1833	49 (2.67%)	39 (2.13%)	10 (0.55%)
Closely-held family firms, CEO is not a family member	509	37 (7.27%)	22 (4.32%)	15 (2.95%)
Publicly-listed family firms, CEO is a family member	399	14 (3.51%)	10 (2.51%)	4 (1.00%)
Publicly-listed family firms, CEO is not a family member	204	29 (14.22%)	17 (8.33%)	12 (5.88%)
Non-family-owned publicly listed firms	560	51 (9.11%)	26 (4.64%)	25 (4.46%)
Reciprocal	405	30 (7.41%)	16 (3.95%)	14 (3.46%)
Other Main Business	237	36 (15.19%)	10 (4.22%)	26 (10.97%)

Appendix Table 5-A

Logistic regression results of turnover

This table reports logistic regression results for the full sample period during 1993-2006. Column (1) is a replication of Table 5 column (4). Column (2-IV) uses instrument variable methodology and Column (3-IM) uses inverse Mill's ratio methodology. The dependent variable is equal to 1 if there is a CEO turnover event in a given year and 0 otherwise. We omit the dummy of the non-family public listed firms and let it be the base firm structure. $ROA_{t-1} * (\text{Top 90 Deciles ROA Dummy})_{t-1}$ is the interaction term of ROA_{t-1} and the dummy variable indicating that ROA_{t-1} is in the top 90 deciles. *p-values* are reported in parentheses below.

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Independent Variables	(1)	(2-IV)	(3-IM)
Intercept	-3.899*** (0.000)	-2.364*** (0.003)	-0.023 (0.410)
ROA _{<i>t-1</i>}	-3.920*** (0.001)		-0.203** (0.029)
Predicted ROA _{<i>t-1</i>}		-3.358 (0.622)	
ROA _{<i>t-1</i>} * (Top 90 Decile ROA Dummy) _{<i>t-1</i>}	3.823** (0.021)	3.714 (0.508)	0.304 (0.016)
Median of Industry ROA _{<i>t-1</i>}	19.578** (0.015)	12.269 (0.162)	1.239** (0.034)
Firm size _{<i>t-1</i>} (=Log of Net Premiums Written)	0.065** (0.036)	0.055 (0.239)	0.006** (0.025)
Leverage _{<i>t-1</i>} (=Liability/Assets)	-0.130 (0.664)	-0.228 (0.626)	-0.017 (0.487)
Herfindahl Index of Lines of Business _{<i>t-1</i>}	-0.027 (0.882)	-0.089 (0.433)	-0.015 (0.269)
Herfindahl Index of States of Business _{<i>t-1</i>}	-0.190 (0.212)	-0.053 (0.613)	-0.008 (0.503)
Fraction of NPW from Personal Lines _{<i>t-1</i>}	-0.181 (0.242)	-0.074 (0.481)	-0.009 (0.481)
Fraction of NPW from Commercial Long Tail Lines _{<i>t-1</i>}	-0.248 (0.102)	0.053 (0.613)	0.004 (0.687)
Log of Board Size _{<i>t</i>}	0.097 (0.451)	-0.075 (0.341)	-0.008 (0.430)
Dummy equal to one if fraction of outside directors _{<i>t</i>} > 0.6	-0.051 (0.660)	0.033 (0.657)	-0.004 (0.704)
Dummy for Mutual firm _{<i>t-1</i>}	-0.085 (0.657)	0.092 (0.682)	0.009 (0.735)
Dummy for Non-family-owned closely held firms _{<i>t-1</i>}	0.013 (0.953)	0.202 (0.391)	0.025 (0.381)
Dummy for Closely-held family firms, CEO is family member _{<i>t-1</i>}	-0.965*** (0.000)	-0.262 (0.284)	-0.027 (0.330)
Dummy for Closely-held family firms, CEO is not family member _{<i>t-1</i>}	-0.068 (0.801)	0.264 (0.347)	0.030 (0.330)
Dummy for Publicly-listed family firms, CEO is family member _{<i>t-1</i>}	-0.980*** (0.003)	-0.194 (0.473)	-0.027 (0.421)
Dummy for Publicly-listed family firms, CEO is not family member _{<i>t-1</i>}	0.407 (0.141)	0.543 (0.103)	0.116** (0.026)
Dummy for Reciprocal firm _{<i>t-1</i>}	0.027 (0.917)	0.106 (0.685)	0.006 (0.852)
Dummy for Other Main Business firm _{<i>t-1</i>}	0.764*** (0.003)	0.542** (0.031)	0.094*** (0.006)
Mills Lambda			0.107 (0.519)
Number of firm years	8348	5014	5014

Appendix Table 6-A1

Multinomial regression results of routine and non-routine turnover (using aggregated affiliated subsidiaries data to replace group data)

This table reports logistic regression results for the sample period during 1993-2006. Column (1)-(2) provide multinomial logistic regression results for the outcomes routine turnover, and non-routine turnover dummy variables, respectively, with no turnover event as the base outcome. Column (3) shows the logistic regression result with dependent variable as the turnover. The dependent variables are listed on the top of the columns. We omit the dummy of the non-family public listed firms and let it be the base firm structure. $ROA_{t-1} * (\text{Top 90 Deciles ROA Dummy})_{t-1}$ is the interaction term of ROA_{t-1} and the dummy variable indicating that ROA_{t-1} in the top 90 deciles. The other independent variables are as defined in Table 1, Table 2 and Table3. p-values are reported in parentheses below.

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Routine Turnover_t	Non-routine Turnover_t	Turnover_t
	(1)	(2)	(3)
Intercept	-4.965*** (0.000)	-4.069*** (0.000)	-3.862*** (0.000)
ROA _{t-1}	-1.969 (0.253)	-6.620*** (0.000)	-4.248*** (0.001)
ROA _{t-1,t-1} * (Top 90 Decile ROA Dummy) _{t-1}	1.400 (0.565)	5.873** (0.022)	3.448* (0.054)
Median of Industry ROA _{t-1}	12.733 (0.153)	19.593* (0.067)	15.878** (0.022)
Firm size _{t-1} (=Log of Net Premiums Written)	0.093** (0.019)	0.006 (0.901)	0.058* (0.059)
Leverage _{t-1} (=Liability/Assets)	-0.111 (0.786)	0.100 (0.831)	-0.022 (0.944)
Herfindahl Index of Lines of Business _{t-1}	-0.476* (0.057)	0.457 (0.109)	-0.063 (0.738)
Herfindahl Index of States of Business _{t-1}	-0.386* (0.059)	-0.027 (0.909)	-0.244 (0.123)
Fraction of NPW from Personal Lines _{t-1}	-0.225 (0.270)	0.123 (0.607)	-0.093 (0.555)
Fraction of NPW from Commercial Long Tail Lines _{t-1}	-0.228 (0.288)	-0.137 (0.529)	-0.164 (0.29)
Log of Board Size _t	0.243 (0.153)	0.072 (0.712)	0.160 (0.218)
Dummy equal to one if fraction of outside directors _t > 0.6	-0.346** (0.019)	0.312* (0.087)	-0.078 (0.504)
Dummy for Mutual firm _{t-1}	0.482* (0.060)	-0.716*** (0.009)	-0.033 (0.864)
Dummy for Non-family-owned closely held firms _{t-1}	0.070 (0.828)	-0.090 (0.766)	0.037 (0.868)
Dummy for Closely-held family firms, CEO is family member _{t-1}	-0.177 (0.578)	-2.217*** (0.000)	-0.929*** (0.000)
Dummy for Closely-held family firms, CEO is not family member _{t-1}	0.519 (0.148)	-0.252 (0.520)	0.171 (0.526)
Dummy for Publicly-listed family firms, CEO is family member _{t-1}	-0.572 (0.145)	-1.750*** (0.005)	-0.994*** (0.002)
Dummy for Publicly-listed family firms, CEO is not family member _{t-1}	0.431 (0.240)	0.352 (0.359)	0.379 (0.164)
Dummy for Reciprocal firm _{t-1}	0.412 (0.241)	-0.409 (0.263)	0.045 (0.863)
Dummy for Other Main Business firm _{t-1}	0.218 (0.632)	0.910*** (0.007)	0.743*** (0.006)
Sample Size	8145	8145	8145
Log likelihood	-2262.157	-2262.157	-1930.320

Appendix Table 6-A2

Multinomial regression results of routine and non-routine turnover using probit model

This table reports probit regression results for the sample period during 1993-2006. Column (1)-(2) provide multinomial probit regression results for the outcomes routine turnover, and non-routine turnover dummy variables, respectively, with no turnover event as the base outcome. Column (3) provides the probit regression result with dependent variable as the turnover. The dependent variables are listed on the top of the columns. We omit the dummy of the non-family public listed firms and let it be the base firm structure. $ROA_{t-1} * (\text{Top 90 Deciles ROA Dummy})_{t-1}$ is the interaction term of ROA_{t-1} and the dummy variable indicating that ROA_{t-1} in the top 90 deciles. The other independent variables are as defined in Table 1, Table 2 and Table3. p-values are reported in parentheses below each coefficient estimate using robust standard errors controlling for firm-level clustering.

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Routine Turnover_t	Non-routine Turnover_t	Turnover_t
	(1)	(2)	(3)
Intercept	-3.414*** (0.000)	-3.126*** (0.000)	-2.080*** (0.000)
ROA _{t-1}	-1.400 (0.135)	-3.666*** (0.000)	-1.857*** (0.001)
ROA _{t-1} * (Top 90 Decile ROA Dummy) _{t-1}	1.553 (0.251)	3.528** (0.014)	1.828** (0.021)
Median of Industry ROA _{t-1}	11.575* (0.061)	13.370* (0.074)	9.449** (0.016)
Firm size _{t-1} (=Log of Net Premiums Written)	0.058* (0.082)	0.011 (0.686)	0.030* (0.099)
Leverage _{t-1} (=Liability/Assets)	-0.103 (0.707)	-0.035 (0.882)	-0.056 (0.719)
Herfindahl Index of Lines of Business _{t-1}	-0.248* (0.093)	0.333** (0.036)	-0.007 (0.933)
Herfindahl Index of States of Business _{t-1}	-0.227* (0.050)	0.043 (0.752)	-0.095 (0.175)
Fraction of NPW from Personal Lines _{t-1}	-0.158 (0.383)	0.027 (0.835)	-0.077 (0.428)
Fraction of NPW from Commercial Long Tail Lines _{t-1}	-0.153 (0.257)	-0.156 (0.248)	-0.113 (0.133)
Log of Board Size _t	0.074 (0.505)	0.049 (0.661)	0.046 (0.462)
Dummy equal to one if fraction of outside directors _t > 0.6	-0.192** (0.032)	0.189** (0.048)	-0.031 (0.559)
Dummy for Mutual firm _{t-1}	0.219 (0.282)	-0.459*** (0.003)	-0.049 (0.648)
Dummy for Non-family-owned closely held firms _{t-1}	0.007 (0.974)	-0.107 (0.532)	-0.010 (0.929)
Dummy for Closely-held family firms, CEO is family member _{t-1}	-0.228 (0.327)	-1.236*** (0.000)	-0.451*** (0.000)
Dummy for Closely-held family firms, CEO is not family member _{t-1}	0.244 (0.375)	-0.268 (0.234)	0.018 (0.903)
Dummy for Publicly-listed family firms, CEO is family member _{t-1}	-0.389* (0.090)	-1.039*** (0.000)	-0.464*** (0.001)
Dummy for Publicly-listed family firms, CEO is not family member _{t-1}	0.309 (0.170)	0.261 (0.270)	0.208 (0.134)
Dummy for Reciprocal firm _{t-1}	0.176 (0.432)	-0.315 (0.146)	-0.026 (0.827)
Dummy for Other Main Business firm _{t-1}	0.234 (0.414)	0.636*** (0.002)	0.390*** (0.006)
Sample Size	8348	8348	8348
Log pseudolikelihood	-2312.168	-2312.168	-1974.621

Table 1**Descriptive statistics of the financial characteristic variables**

This table reports summary statistics on financial variables collected from the NAIC database for sample period 1993-2006. ROA is the ratio of net income after taxes and extraordinary items to total admitted assets. ROABTD is the ratio of operating income on assets which is the income before taxes and dividends to policyholders. ROE is the ratio of net income after taxes and extraordinary items to equity (surplus in insurance). ROA, ROABTD, ROE, and Combined ratio are winsorized at 1 and 99 percentile to remove excess effects of outliers. Leverage is the ratio of Liability to Total Admitted Assets. Herfindahl indexes of line and states of business are Herfindahl indexes of premiums written by product line and by state, respectively. Fraction of NPW from commercial long tail lines (Workers' Compensation, Other Liability, and Commercial Automobile Liability) is the proportion of Net Premiums Written (NPW) in long tail lines to total NPW. Fraction of NPW from personal lines is the proportion of NPW in personal lines (Farm-owners Multiple Peril, Homeowners Multiple Peril, Automobile physical damage and personal Automobile Liability) to total NPW. Percentage of Assets in Stocks, Real Estate, Mortgage is the ratio of insurer's invested assets in stocks, real estate, mortgage to total invested assets. Dummy for Independent Agency Firm equals to one if the insurer's distribution system is agency and zero otherwise. Dummy for Group Affiliation equals to one if the insurer is affiliated to a group and zero otherwise.

Variable	Number	Mean	Median	Std	Min	Max
ROA	8715	0.026	0.027	0.049	-0.158	0.171
ROABTD	8715	0.040	0.040	0.061	-0.169	0.225
ROE	8715	0.060	0.066	0.137	-0.570	0.442
Combined ratio	8568	1.044	1.006	0.347	0.235	3.354
Log of Net Premiums Written	8568	16.862	16.831	2.367	3.912	24.593
Log of total admitted assets	8715	17.919	17.718	2.181	11.027	25.437
Leverage (=Liability/Assets)	8715	0.547	0.597	0.208	0.019	0.918
Herfindahl Index of Lines of Business	8568	0.546	0.472	0.302	0.094	1.000
Herfindahl Index of States of Business	8432	0.682	0.935	0.369	0.035	1.000
Fraction of NPW from Commercial Long Tail Lines	8715	0.244	0.044	0.340	0.000	1.000
Fraction of NPW from Personal Lines	8715	0.396	0.345	0.382	0.000	1.000
Percentage of Assets in Stocks, Real Estate, Mortgage	8715	0.168	0.122	0.171	-0.012	0.986
Dummy for Independent Agency Firm	5293	0.679	1.000	0.467	0.000	1.000
Dummy for Group Affiliation	8715	0.367	0.000	0.482	0.000	1.000

Table 2

Descriptive statistics of turnover by organizational form and ownership structure

This table reports summary statistics for our sample during 1993-2006. The table presents summary statistics of corporate governance variables by organizational form and ownership structure, respectively. Each year issue of Bests Insurance Reports gives the corporate governance variables from the mid of the last year till the mid of the current year of publication. Mutual is a dummy variable equal to one if the firm is a mutual firm and zero otherwise. Closely-held firm is a stock firm not publicly listed, including three types: EOCF, NEOCF and Closed. EOCF is a dummy variable equal to one if the firm is a closely-held family firm with CEO as a family member, and zero otherwise. NEOCF is a dummy variable equal to one if the firm is a closely-held family firm with CEO as a non-family member, and zero otherwise. Closed is a dummy variable equal to one if the firm is a diffused-owned closely-held stock firm and zero otherwise. Publicly listed firm is a stock firm publicly listed, including three types: EOPF, NEOPF and NonFamilyPF. EOPF is a dummy variable equal to one if the firm is a publicly listed family firm with CEO as a family member, and zero otherwise. NEOPF is a dummy variable equal to one if the firm is a publicly listed family firm with CEO as a non-family member, and zero otherwise. NonFamilyPF is a dummy variable equal to one if the firm is a widely held (non-family-owned) publicly listed firm. Reciprocal is a dummy variable equal to one if the firm is a reciprocal or reciprocal. Other is a dummy variable equal to one if the firm is a risk retention group or ultimately owned by a public parent firm not in the insurance industry. Board Size is the number of the board of directors. Board Independence is the proportion of independent board of directors. Tenure is the total years CEO remaining in the current CEO position.

Variable	Observation	Board Size				Board Independence			
		mean	median	min	max	mean	median	min	max
Full sample	8715	9.26	9	0	39	0.597	0.667	0	1
Mutual	4073	10.273	9	3	39	0.708	0.727	0	1
Non-family-owned closely held firms	750	10.896	9	2	32	0.659	0.778	0	1
Closely-held family firms, CEO is a family member	1723	6.699	6	0	17	0.343	0.375	0	1
Closely-held family firms, CEO is not a family member	475	5.774	5	2	13	0.281	0.25	0	0.846
Publicly-listed family firms, CEO is a family member	378	9.758	9	4	20	0.584	0.594	0	0.909
Publicly-listed family firms, CEO is not a family member	183	9.585	9	5	20	0.569	0.571	0.111	0.867
Non-family-owned publicly listed firms	514	10.09	10	4	18	0.731	0.75	0.125	0.941
Reciprocal	390	10.341	9	2	26	0.735	0.846	0	1
Other Main Business	229	7.515	7	3	15	0.504	0.571	0	1

Variable	Observation	CEO Tenure			
		mean	median	min	max
Full sample	8715	8.615	7	0	51
Mutual	4073	7.865	6	0	37
Non-family-owned closely held firms	750	6.512	5	0	26
Closely-held family firms, CEO is a family member	1723	11.789	10	0	44
Closely-held family firms, CEO is not a family member	475	6.309	5	0	21
Publicly-listed family firms, CEO is a family member	378	17.968	17	0	51
Publicly-listed family firms, CEO is not a family member	183	4.754	3	0	17
Non-family-owned publicly listed firms	514	6.572	5	0	31
Reciprocal	390	7.177	6	0	28
Other Main Business	229	4.437	3	0	18

Table 3**Descriptive statistics of turnover type by organizational form and ownership structure**

This table reports summary statistics for our sample during 1993-2006. The table presents the observation number of turnover event, routine turnover event and non-routine turnover event, by organizational form and ownership structures, respectively. The turnover rates are given in parentheses. Routine turnover is defined as any changes in the CEO of the firm if the departing CEO remains in the company (generally on the board of directors) for more than 2 year after stepping down, or the explicit information about the turnover is available indicating reasons related to death or illness and those for which the stated reason for turnover is retirement or normal succession. All other turnovers are defined as non-routine turnover. The organizational form variables are as defined in Table 2.

Variable	Number of Observation	Turnover	Routine Turnover	Non-Routine Turnover
Full sample	8715	578 (6.66%)	339 (3.89%)	239 (2.74%)
Mutual	4073	283 (6.95%)	180 (4.42%)	103 (2.53%)
Non-family-owned closely held firms	750	58 (7.73%)	24 (3.20%)	34 (4.53%)
Closely-held family firms, CEO is a family member	1723	49 (2.84%)	39 (2.26%)	10 (0.58%)
Closely-held family firms, CEO is not a family member	475	35 (7.37%)	20 (4.21%)	15 (3.16%)
Publicly-listed family firms, CEO is a family member	378	14 (3.70%)	10 (2.65%)	4 (1.06%)
Publicly-listed family firms, CEO is not a family member	183	26 (14.21%)	15 (8.20%)	11 (6.01%)
Non-family-owned publicly listed firms	514	49 (9.53%)	25 (4.86%)	24 (4.46%)
Reciprocal	390	29 (7.44%)	16 (4.10%)	13 (3.33%)
Other Main Business	229	35 (15.28%)	10 (4.37%)	25 (10.92%)

Table 4**Descriptive statistics of succession type by organizational form and ownership structure**

This table reports summary statistics for our sample during 1993-2006. Panel A-C present observation number of Inside Succession, Outside Succession and Family Succession condition on the occurrence of turnover event, routine turnover event and non-routine turnover event, by organizational form and ownership structure, respectively. The rates of succession type condition on the occurrence of turnover event, routine turnover event and non-routine turnover event, respectively, are given in parentheses. Tenure is the total years CEO remaining in the current CEO position. Inside Succession happens if an insider is promoted to CEO condition on turnover. Outside Succession happens if an outsider is promoted to CEO condition on turnover. Family Succession happens if a family member is promoted to CEO condition on turnover. We cannot find the source of all successions and code any unidentifiable successions as missing. Thus, the rate of inside succession and outside succession does not add up to one hundred percent. The other variables are as defined in Table 2 and 3.

Variable	Turnover Observation	Inside Succession Observation	Outside Succession Observation	Family Succession Observation
Panel A. Turnover				
Full sample	611	339 (55.48%)	208 (34.04%)	58 (9.49%)
Mutual	302	205 (67.88%)	93 (30.79%)	-
Non-family-owned closely held firms	63	32 (50.79%)	29 (46.03%)	-
Closely-held family firms, CEO is family member	49	1 (2.04%)	2 (4.08%)	46 (93.88%)
Closely-held family firms, CEO is not family member	37	17 (45.95%)	20 (54.05%)	0 (0.00%)
Publicly-listed family firms, CEO is family member	14	2 (14.29%)	0 (0.00%)	12 (85.71%)
Publicly-listed family firms, CEO is not family member	29	14 (48.28%)	15 (51.72%)	0 (0.00%)
Non-family-owned publicly listed firms	51	30 (58.82%)	21 (41.18%)	-
Reciprocal	30	21 (70.00%)	9 (30.00%)	-
Other Main Business	36	17 (47.22%)	19 (52.78%)	-
Panel B Routine Turnover				
Full sample	360	230 (63.89%)	80 (22.22%)	45 (12.50%)
Mutual	193	152 (78.76%)	38 (19.69%)	-
Non-family-owned closely held firms	27	17 (62.96%)	8 (29.63%)	-
Closely-held family firms, CEO is a family member	39	0 (0.00%)	2 (5.13%)	37 (94.87%)
Closely-held family firms, CEO is not a family member	22	12 (54.55%)	10 (45.45%)	0 (0.00%)
Publicly-listed family firms, CEO is a family member	10	2 (20.00%)	0 (0.00%)	8 (80.00%)
Publicly-listed family firms, CEO is not a family member	17	10 (58.82%)	7 (41.18%)	0 (0.00%)
Non-family-owned publicly listed firms	26	18 (69.23%)	8 (30.77%)	-
Reciprocal	16	14 (87.50%)	2 (12.50%)	-
Other Main Business	10	5 (50.00%)	5 (50.00%)	-
Panel C Non-Routine Turnover				
Full sample	251	109 (43.43%)	128 (51.00%)	13 (5.18%)
Mutual	109	53 (48.62%)	55 (50.46%)	-
Non-family-owned closely held firms	36	15 (41.67%)	21 (58.33%)	-
Closely-held family firms, CEO is a family member	10	1 (10.00%)	0 (0.00%)	9 (90.00%)
Closely-held family firms, CEO is not a family member	15	5 (33.33%)	10 (66.67%)	0 (0.00%)
Publicly-listed family firms, CEO is a family member	4	0 (0.00%)	0 (0.00%)	4 (100%)
Publicly-listed family firms, CEO is not a family member	12	4 (33.33%)	8 (66.67%)	0 (0.00%)
Non-family-owned publicly listed firms	25	12 (48.00%)	13 (52.00%)	-
Reciprocal	14	7 (50.00%)	7 (50.00%)	-
Other Main Business	26	12 (46.15%)	14 (53.85%)	-

Table 5**Logistic regression results of turnover**

This table reports logistic regression results for the full sample period during 1993-2006. The dependent variable is equal to 1 if there was a CEO turnover event in a given year and 0 otherwise. We omit the dummy of the non-family public listed firms and let it be the base firm structure. $ROA_{t-1} * (\text{Top 90 Deciles ROA Dummy})_{t-1}$ is the interaction term of ROA_{t-1} and the dummy variable indicating that ROA_{t-1} in the top 90 deciles. The other independent variables are as defined in Table 1, Table 2 and Table3. *p-values* are in parentheses below. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Independent Variables	(1)	(2)	(3)	(4)
Intercept	-2.937*** (0.000)	-4.393*** (0.000)	-2.564*** (0.000)	-3.899*** (0.000)
ROA $_{t-1}$	-2.605** (0.012)	-4.122*** (0.000)	-2.791*** (0.008)	-3.920*** (0.001)
ROA $_{t-1}$ * (Top 90 Decile ROA Dummy) $_{t-1}$	3.053** (0.043)	4.801*** (0.003)	2.993* (0.053)	3.823** (0.021)
Median of Industry ROA $_{t-1}$	12.164 (0.114)	19.288** (0.016)	13.429* (0.084)	19.578** (0.015)
Firm size $_{t-1}$ (=Log of Net Premiums Written)		0.077** (0.009)		0.065** (0.036)
Leverage $_{t-1}$ (=Liability/Assets)		-0.153 (0.607)		-0.130 (0.664)
Herfindahl Index of Lines of Business $_{t-1}$		-0.112 (0.531)		-0.027 (0.882)
Herfindahl Index of States of Business $_{t-1}$		-0.225 (0.128)		-0.190 (0.212)
Fraction of NPW from Personal Lines $_{t-1}$		-0.199 (0.182)		-0.181 (0.242)
Fraction of NPW from Commercial Long Tail Lines $_{t-1}$		-0.203 (0.179)		-0.248 (0.102)
Log of Board Size $_t$		0.152 (0.213)		0.097 (0.451)
(Dummy equal to one if fraction of outside directors > 0.6) $_t$		0.091 (0.401)		-0.051 (0.660)
Dummy for Mutual $_{t-1}$			-0.347** (0.033)	-0.085 (0.657)
Dummy for Non-family-owned closely held firms $_{t-1}$			-0.231 (0.256)	0.013 (0.953)
Dummy for Closely-held family firms, CEO is a family member $_{t-1}$			-1.301*** (0.000)	-0.965*** (0.000)
Dummy for Closely-held family firms, CEO is not a family member $_{t-1}$			-0.294 (0.204)	-0.068 (0.801)
Dummy for Publicly-listed family firms, CEO is a family member $_{t-1}$			-1.006*** (0.001)	-0.980*** (0.003)
Dummy for Publicly-listed family firms, CEO is not a family member $_{t-1}$			0.452* (0.082)	0.407 (0.141)
Dummy for Reciprocal $_{t-1}$			-0.271 (0.268)	0.027 (0.917)
Dummy for Other main business firm $_{t-1}$			0.499** (0.037)	0.764*** (0.003)
Number of firm years	8715	8348	8715	8348
Turnover event counts	578	553	578	553
Log likelihood	-2122.64	-2010.28	-2072.71	-1974.13
Pseudo-R square	0.0019	0.0120	0.0254	0.0301

Table 6**Multinomial regression results of routine and non-routine turnover**

This table reports logistic regression results for the sample period during 1993-2006. Column (1)-(2) provide multinomial logistic regression results for the outcomes routine turnover, and non-routine turnover dummy variables, respectively, with no turnover event as the base outcome. Column (3) copies the logistic regression result with dependent variable as the turnover from Table 5 column (4). The dependent variables are listed on the top of the columns. We omit the dummy of the non-family public listed firms and let it be the base firm structure. $ROA_{t-1} * (\text{Top 90 Deciles ROA Dummy})_{t-1}$ is the interaction term of ROA_{t-1} and the dummy variable indicating that ROA_{t-1} is in the top 90 deciles. The other independent variables are as defined in Table 1, Table 2 and Table 3. *p-values* are in reported in parentheses below. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Routine Turnover_t	Non-routine Turnover_t	Turnover_t
	(1)	(2)	(3)
Intercept	-4.806*** (0.000)	-4.306*** (0.000)	-3.899*** (0.000)
ROA _{t-1}	-2.112 (0.190)	-5.784*** (0.000)	-3.920*** (0.001)
ROA _{t-1} * (Top 90 Decile ROA Dummy) _{t-1}	2.474 (0.265)	5.498*** (0.022)	3.823** (0.021)
Median of Industry ROA _{t-1}	18.456* (0.074)	19.720 (0.108)	19.578** (0.015)
Firm size _{t-1} (=Log of Net Premiums Written)	0.095** (0.018)	0.019 (0.688)	0.065** (0.036)
Leverage _{t-1} (=Liability/Assets)	-0.211 (0.590)	-0.062 (0.890)	-0.130 (0.664)
Herfindahl Index of Lines of Business _{t-1}	-0.457* (0.059)	0.537* (0.057)	-0.027 (0.882)
Herfindahl Index of States of Business _{t-1}	-0.381** (0.053)	0.111 (0.630)	-0.190 (0.212)
Fraction of NPW from Personal Lines _{t-1}	-0.285 (0.154)	-0.003 (0.992)	-0.181 (0.242)
Fraction of NPW from Commercial Long Tail Lines _{t-1}	-0.251 (0.227)	-0.289 (0.178)	-0.248 (0.102)
Log of Board Size _t	0.141 (0.399)	0.067 (0.729)	0.097 (0.451)
(Dummy equal to one if fraction of outside directors > 0.6) _t	-0.316** (0.030)	0.337* (0.065)	-0.051 (0.660)
Dummy for Mutual _{t-1}	0.403 (0.119)	-0.763*** (0.006)	-0.085 (0.657)
Dummy for Non-family-owned closely held firms _{t-1}	0.006 (0.986)	-0.158 (0.601)	0.013 (0.953)
Dummy for Closely-held family firms, CEO is a family member _{t-1}	-0.275 (0.383)	-2.183*** (0.000)	-0.965*** (0.000)
Dummy for Closely-held family firms, CEO is not a family member _{t-1}	0.448 (0.207)	-0.425 (0.293)	-0.068 (0.801)
Dummy for Publicly-listed family firms, CEO is a family member _{t-1}	-0.577 (0.145)	-1.740*** (0.005)	-0.980*** (0.003)
Dummy for Publicly-listed family firms, CEO is not a family member _{t-1}	0.427 (0.251)	0.423 (0.277)	0.407 (0.141)
Dummy for Reciprocal _{t-1}	0.342 (0.334)	-0.509 (0.175)	0.027 (0.917)
Dummy for Other main business firm _{t-1}	0.286 (0.487)	0.941*** (0.005)	0.764*** (0.003)
Sample Size	8348	8348	8348
Turnover event counts	326	227	553
Log likelihood	-2312.19	-2312.19	-1974.13
Pseudo-R square	0.0405	0.0405	0.0301

Table 6.1**Multinomial regression results of routine and non-routine turnover**

This table reports logistic regression results for the sample period during 1993-2006. Column (1)-(2) provide multinomial logistic regression results for the outcomes routine turnover, and non-routine turnover dummy variables, respectively, with no turnover event as the base outcome. Column (3) copies the logistic regression result with dependent variable as the turnover from Table 5 column (2). The dependent variables are listed on the top of the columns. $ROA_{t-1} * (\text{Top 90 Deciles ROA Dummy})_{t-1}$ is the interaction term of ROA_{t-1} and the dummy variable indicating that ROA_{t-1} is in the top 90 deciles. The other independent variables are as defined in Table 1, Table 2 and Table 3. *p-values* are reported in parentheses below. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Routine Turnover_t	Non-routine Turnover_t	Turnover_t
	(1)	(2)	(3)
Intercept	-4.638*** (0.000)	-5.578*** (0.000)	-4.393*** (0.000)
ROA _{t-1}	-2.221 (0.161)	-6.354*** (0.000)	-4.122*** (0.000)
ROA _{t-1} * (Top 90 Decile ROA Dummy) _{t-1}	2.268 (0.300)	8.011*** (0.000)	4.801*** (0.003)
Median of Industry ROA _{t-1}	18.051* (0.079)	20.333* (0.096)	19.288** (0.016)
Firm size _{t-1} (=Log of Net Premiums Written)	0.087** (0.022)	0.057 (0.213)	0.077** (0.009)
Leverage _{t-1} (=Liability/Assets)	-0.306 (0.429)	0.057 (0.898)	-0.153 (0.607)
Herfindahl Index of Lines of Business _{t-1}	-0.576** (0.014)	0.499* (0.065)	-0.112 (0.531)
Herfindahl Index of States of Business _{t-1}	-0.269 (0.160)	-0.174 (0.436)	-0.225 (0.128)
Fraction of NPW from Personal Lines _{t-1}	-0.227 (0.239)	-0.127 (0.577)	-0.199 (0.182)
Fraction of NPW from Commercial Long Tail Lines _{t-1}	-0.254 (0.221)	0.165 (0.441)	-0.203 (0.179)
Log of Board Size _t	0.193 (0.222)	0.076 (0.679)	0.152 (0.213)
(Dummy equal to one if fraction of outside directors > 0.6) _t	-0.163 (0.229)	0.489*** (0.005)	0.091 (0.401)
Dummy for Mutual _{t-1}			
Dummy for Non-family-owned closely held firms _{t-1}			
Dummy for Closely-held family firms, CEO is a family member _{t-1}			
Dummy for Closely-held family firms, CEO is not a family member _{t-1}			
Dummy for Publicly-listed family firms, CEO is a family member _{t-1}			
Dummy for Publicly-listed family firms, CEO is not a family member _{t-1}			
Dummy for Reciprocal _{t-1}			
Dummy for Other main business firm _{t-1}			
Sample Size	8348	8348	8348
Turnover event counts	326	227	553
Log likelihood	-2369.24	-2369.24	-2010.28
Pseudo-R square	0.0168	0.0168	0.0120

Table 7

Logistic/Multinomial logistic regression results of turnover by organizational form and ownership structure

This table reports logistic regression results for the sample period during 1993-2006. Panel A-I provide results of the mutual firm subsample, Non-family-owned closely held firms subsample, closely-held family firms, CEO is a family member subsample, closely-held family firms, CEO is not a family member subsample, publicly-listed family firms, CEO is a family member subsample, publicly-listed family firms, CEO is not a family member subsample, non-family-owned publicly listed firms subsample, reciprocal subsample and other main business firm subsample, respectively. Column 1 provides logistic regression results with dependent variable as the turnover. Column 2-3 provide multinomial logistic regression results for the outcomes routine turnover, and non-routine turnover dummy variables, respectively, with no turnover event as the base outcome. The dependent variables are listed on the top of the columns. $ROA_{t-1} * (\text{Top 90 Deciles ROA Dummy})_{t-1}$ is the interaction term of ROA_{t-1} and the dummy variable indicating that ROA_{t-1} is in the top 90 deciles. The other independent variables are as defined in Table 1-3. *p-values* are reported in parentheses below. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A. Mutuals subsample			
	Turnover _t	Routine Turnover _t	Non-routine Turnover _t
	(1)	(2)	(3)
Intercept	-4.555*** (0.000)	-4.930*** (0.000)	-5.739*** (0.000)
ROA _{t-1}	-4.373** (0.013)	-3.361 (0.138)	-5.837** (0.027)
ROA _{t-1} * (Top 90 Decile ROA Dummy) _{t-1}	1.653 (0.590)	-0.631 (0.880)	4.503 (0.308)
Median of industry ROA _{t-1}	24.661** (0.031)	29.488** (0.039)	15.321 (0.404)
Firm size _{t-1} (=Log of Net Premiums Written)	0.092** (0.039)	0.110** (0.046)	0.049 (0.494)
Leverage _{t-1} (=Liability/Assets)	-0.702* (0.098)	-0.643 (0.231)	-0.745 (0.264)
Herfindahl Index of Lines of Business _{t-1}	-0.535* (0.073)	-1.132*** (0.003)	0.436 (0.354)
Herfindahl Index of States of Business _{t-1}	-0.052 (0.827)	-0.264 (0.363)	0.486 (0.232)
Fraction of NPW from Personal Lines _{t-1}	-0.472* (0.062)	-0.696** (0.029)	-0.062 (0.876)
Fraction of NPW from Commercial Long Tail Lines _{t-1}	0.054 (0.821)	-0.128 (0.690)	-0.059 (0.866)
Log of Board Size _t	0.291 (0.143)	0.342 (0.176)	0.189 (0.540)
(Dummy equal to one if fraction of outside directors > 0.6) _t	0.073 (0.678)	-0.118 (0.576)	0.464 (0.134)
Sample Size	3992	3992	3992
Turnover event counts	277	178	99
Log likelihood	-993.166	-1161.904	-1161.904
Pseudo-R square	0.0130	0.0210	0.0210

Panel B. Non-family-owned closely-held firms subsample			
	Turnover t	Routine Turnover t	Non-routine Turnover t
	(1)	(2)	(3)
Intercept	-2.367 (0.190)	-6.263** (0.025)	-0.951 (0.690)
ROA $t-1$	1.779 (0.660)	11.533 (0.145)	-2.879 (0.526)
ROA $t-1$ * (Top 90 Decile ROA Dummy) $t-1$	1.224 (0.805)	-9.930 (0.265)	7.081 (0.231)
Median of industry ROA $t-1$	4.517 (0.858)	19.741 (0.620)	-7.569 (0.814)
Firm size $t-1$ (=Log of Net Premiums Written)	0.053 (0.590)	0.197 (0.191)	-0.044 (0.733)
Leverage $t-1$ (=Liability/Assets)	-0.147 (0.889)	0.282 (0.876)	-0.304 (0.812)
Herfindahl Index of Lines of Business $t-1$	0.379 (0.512)	0.371 (0.686)	0.362 (0.627)
Herfindahl Index of States of Business $t-1$	-0.230 (0.575)	-0.306 (0.641)	-0.181 (0.725)
Fraction of NPW from Personal Lines $t-1$	0.443 (0.362)	1.173* (0.092)	-0.143 (0.835)
Fraction of NPW from Commercial Long Tail Lines $t-1$	-0.403 (0.334)	0.059 (0.93)	-0.725 (0.173)
Log of Board Size t	-0.684* (0.055)	-0.869 (0.109)	-0.623 (0.183)
(Dummy equal to one if fraction of outside directors > 0.6) t	0.441 (0.243)	0.012 (0.983)	0.751 (0.136)
Sample Size	718	718	718
Turnover event counts	56	23	33
Log likelihood	-193.049	-224.691	-224.691
Pseudo-R square	0.0182	0.0420	0.0420

Panel C. Closely-held family firms, CEO is a family member subsample			
	Turnover _{<i>t</i>}	Routine Turnover _{<i>t</i>}	Non-routine Turnover _{<i>t</i>}
	(1)	(2)	(3)
Intercept	-4.508** (0.049)	-4.273* (0.099)	-9.292* (0.069)
ROA _{<i>t-1</i>}	-0.208 (0.955)	1.081 (0.811)	-2.879 (0.660)
ROA _{<i>t-1</i>} * (Top 90 Decile ROA Dummy) _{<i>t-1</i>}	3.303 (0.488)	3.119 (0.558)	0.345 (0.976)
Median of industry ROA _{<i>t-1</i>}	31.659 (0.258)	10.310 (0.732)	144.272* (0.066)
Firm size _{<i>t-1</i>} (=Log of Net Premiums Written)	-0.011 (0.936)	0.046 (0.761)	-0.249 (0.404)
Leverage _{<i>t-1</i>} (=Liability/Assets)	0.389 (0.713)	0.133 (0.909)	1.658 (0.503)
Herfindahl Index of Lines of Business _{<i>t-1</i>}	0.929 (0.168)	0.443 (0.543)	2.982* (0.092)
Herfindahl Index of States of Business _{<i>t-1</i>}	-0.618 (0.238)	-0.472 (0.416)	-1.205 (0.309)
Fraction of NPW from Personal Lines _{<i>t-1</i>}	0.569 (0.150)	-0.005 (0.991)	2.862*** (0.003)
Fraction of NPW from Commercial Long Tail Lines _{<i>t-1</i>}	-0.318 (0.534)	-0.535 (0.36)	0.545 (0.606)
Log of Board Size _{<i>t</i>} (Dummy equal to one if fraction of outside directors > 0.6) _{<i>t</i>}	-0.097 (0.779)	-0.191 (0.620)	0.169 (0.824)
Sample Size	1602	1602	1602
Turnover event counts	45	36	9
Log likelihood	-198.010	-213.877	-213.877
Pseudo-R square	0.0347	0.0604	0.0604

Panel D. Closely-held family firms, CEO is not a family member subsample			
	Turnover t	Routine Turnover t	Non-routine Turnover t
	(1)	(2)	(3)
Intercept	-2.409 (0.403)	-2.674 (0.478)	-5.066 (0.254)
ROA $t-1$	-1.390 (0.736)	-0.004 (0.999)	-3.607 (0.544)
ROA $t-1$ * (Top 90 Decile ROA Dummy) $t-1$	1.876 (0.755)	-1.427 (0.867)	5.965 (0.475)
Median of industry ROA $t-1$	46.850 (0.193)	3.229 (0.939)	134.470** (0.044)
Firm size $t-1$ (=Log of Net Premiums Written)	-0.220 (0.145)	-0.172 (0.400)	-0.274 (0.196)
Leverage $t-1$ (=Liability/Assets)	4.605*** (0.002)	4.729** (0.021)	4.569** (0.039)
Herfindahl Index of Lines of Business $t-1$	-0.731 (0.354)	-0.806 (0.434)	-0.546 (0.644)
Herfindahl Index of States of Business $t-1$	-0.659 (0.340)	-0.788 (0.351)	-0.388 (0.736)
Fraction of NPW from Personal Lines $t-1$	0.120 (0.833)	0.158 (0.828)	0.121 (0.889)
Fraction of NPW from Commercial Long Tail Lines $t-1$	-0.243 (0.704)	0.009 (0.992)	-0.612 (0.535)
Log of Board Size t	0.198 (0.712)	0.252 (0.721)	0.144 (0.856)
(Dummy equal to one if fraction of outside directors > 0.6) t	0.522 (0.325)	0.592 (0.356)	0.390 (0.656)
Sample Size	450	450	450
Turnover event counts	33	20	13
Log likelihood	-109.880	-129.332	-129.332
Pseudo-R square	0.0686	0.0769	0.0769

Panel E. Publicly-listed family firms, CEO is a family member subsample			
	Turnover $_t$	Routine Turnover $_t$	Non-routine Turnover $_t$
	(1)	(2)	(3)
Intercept	0.781 (0.865)	4.770 (0.409)	-4.828 (0.698)
ROA $_{t-1}$	-5.981 (0.426)	11.357 (0.436)	-28.184** (0.035)
ROA $_{t-1}$ * (Top 90 Decile ROA Dummy) $_{t-1}$	10.854 (0.309)	-7.113 (0.638)	44.811* (0.086)
Median of industry ROA $_{t-1}$	-47.103 (0.343)	-78.335 (0.178)	14.202 (0.908)
Firm size $_{t-1}$ (=Log of Net Premiums Written)	-0.312 (0.124)	-0.488* (0.058)	-0.249 (0.630)
Leverage $_{t-1}$ (=Liability/Assets)	0.911 (0.732)	0.785 (0.824)	3.670 (0.535)
Herfindahl Index of Lines of Business $_{t-1}$	-0.201 (0.895)	-1.234 (0.526)	1.916 (0.649)
Herfindahl Index of States of Business $_{t-1}$	-1.686 (0.200)	-2.736 (0.139)	0.429 (0.842)
Fraction of NPW from Personal Lines $_{t-1}$	0.749 (0.471)	1.455 (0.239)	-0.971 (0.666)
Fraction of NPW from Commercial Long Tail Lines $_{t-1}$	-0.027 (0.983)	0.483 (0.752)	0.453 (0.853)
Log of Board Size $_t$	1.275 (0.185)	1.241 (0.274)	-0.764 (0.786)
(Dummy equal to one if fraction of outside directors > 0.6) $_t$	-0.303 (0.635)	-0.640 (0.398)	2.397 (0.281)
Sample Size	361	361	361
Turnover event counts	13	10	3
Log likelihood	-52.601	-53.138	-53.138
Pseudo-R square	0.0603	0.1565	0.1565

Panel F. Publicly-listed family firms, CEO is not a family member subsample			
	Turnover t	Routine Turnover t	Non-routine Turnover t
	(1)	(2)	(3)
Intercept	-9.949** (0.029)	-7.985 (0.175)	-14.891** (0.033)
ROA $t-1$	-11.496* (0.062)	-2.160 (0.832)	-15.682** (0.046)
ROA $t-1$ * (Top 90 Decile ROA Dummy) $t-1$	4.795 (0.598)	-3.689 (0.764)	10.748 (0.403)
Median of industry ROA $t-1$	17.621 (0.694)	31.328 (0.603)	-2.394 (0.970)
Firm size $t-1$ (=Log of Net Premiums Written)	0.141 (0.524)	0.161 (0.600)	0.143 (0.654)
Leverage $t-1$ (=Liability/Assets)	0.331 (0.893)	-0.620 (0.843)	1.462 (0.702)
Herfindahl Index of Lines of Business $t-1$	2.554* (0.051)	1.621 (0.345)	3.351* (0.068)
Herfindahl Index of States of Business $t-1$	1.012 (0.336)	0.827 (0.562)	1.129 (0.470)
Fraction of NPW from Personal Lines $t-1$	-1.912* (0.057)	-2.937** (0.029)	-0.858 (0.577)
Fraction of NPW from Commercial Long Tail Lines $t-1$	-0.369 (0.738)	-1.099 (0.446)	0.660 (0.694)
Log of Board Size t	1.896* (0.050)	1.083 (0.338)	3.019** (0.042)
(Dummy equal to one if fraction of outside directors > 0.6) t	-0.067 (0.892)	-0.062 (0.925)	0.036 (0.96)
Sample Size	177	177	177
Turnover event counts	24	13	11
Log likelihood	-60.986	-73.635	-73.635
Pseudo-R square	0.1319	0.1517	0.1517

Panel G. Non-family-owned publicly-listed firms subsample			
	Turnover t	Routine Turnover t	Non-routine Turnover t
	(1)	(2)	(3)
Intercept	-3.222 (0.284)	-9.621** (0.041)	-2.020 (0.652)
ROA $t-1$	-2.918 (0.550)	-2.285 (0.793)	-0.359 (0.953)
ROA $t-1$ * (Top 90 Decile ROA Dummy) $t-1$	4.906 (0.413)	9.803 (0.248)	-11.423 (0.349)
Median of industry ROA $t-1$	15.308 (0.592)	25.499 (0.548)	5.220 (0.893)
Firm size $t-1$ (=Log of Net Premiums Written)	-0.065 (0.663)	0.292 (0.225)	-0.360* (0.087)
Leverage $t-1$ (=Liability/Assets)	-0.679 (0.646)	-5.634*** (0.009)	6.284** (0.031)
Herfindahl Index of Lines of Business $t-1$	-0.298 (0.708)	-0.034 (0.979)	-0.646 (0.546)
Herfindahl Index of States of Business $t-1$	-0.722 (0.299)	-0.365 (0.737)	-1.148 (0.243)
Fraction of NPW from Personal Lines $t-1$	0.088 (0.887)	-1.503 (0.186)	1.045 (0.190)
Fraction of NPW from Commercial Long Tail Lines $t-1$	-0.450 (0.560)	0.562 (0.679)	-0.602 (0.536)
Log of Board Size t	1.174 (0.126)	2.286** (0.050)	0.089 (0.933)
(Dummy equal to one if fraction of outside directors > 0.6) t	0.054 (0.911)	-1.182* (0.066)	2.141* (0.056)
Sample Size	447	447	447
Turnover event counts	43	21	22
Log likelihood	-138.730	-153.779	-153.779
Pseudo-R square	0.0199	0.1025	0.1025

Panel H. Reciprocals subsample			
	Turnover _{<i>t</i>}	Routine Turnover _{<i>t</i>}	Non-routine Turnover _{<i>t</i>}
	(1)	(2)	(3)
Intercept	-9.854*** (0.002)	-11.109** (0.014)	-11.981** (0.015)
ROA _{<i>t-1</i>}	-20.078*** (0.001)	-26.893*** (0.000)	-6.314 (0.563)
ROA _{<i>t-1</i>} * (Top 90 Decile ROA Dummy) _{<i>t-1</i>}	17.540* (0.052)	19.666 (0.139)	12.067 (0.360)
Median of industry ROA _{<i>t-1</i>}	44.784 (0.230)	35.361 (0.460)	66.584 (0.265)
Firm size _{<i>t-1</i>} (=Log of Net Premiums Written)	0.437** (0.020)	0.624** (0.018)	0.323 (0.264)
Leverage _{<i>t-1</i>} (=Liability/Assets)	-1.081 (0.500)	-2.517 (0.245)	0.018 (0.994)
Herfindahl Index of Lines of Business _{<i>t-1</i>}	-0.734 (0.457)	-2.142 (0.140)	0.492 (0.740)
Herfindahl Index of States of Business _{<i>t-1</i>}	-0.005 (0.994)	0.444 (0.645)	-0.346 (0.741)
Fraction of NPW from Personal Lines _{<i>t-1</i>}	-1.748* (0.059)	-2.077* (0.081)	-1.899 (0.259)
Fraction of NPW from Commercial Long Tail Lines _{<i>t-1</i>}	0.673 (0.309)	0.904 (0.368)	0.565 (0.529)
Log of Board Size _{<i>t</i>} (Dummy equal to one if fraction of outside directors > 0.6) _{<i>t</i>}	0.216 (0.733)	-0.243 (0.770)	0.689 (0.469)
Sample Size	390	390	390
Turnover event counts	29	16	13
Log likelihood	-93.620	-107.335	-107.335
Pseudo-R square	0.0934	0.1288	0.1288

Panel I. Other main business firms subsample			
	Turnover t	Routine Turnover t	Non-routine Turnover t
	(1)	(2)	(3)
Intercept	-3.417 (0.310)	-5.013 (0.485)	-3.252 (0.385)
ROA $t-1$	0.556 (0.922)	18.144 (0.242)	-3.343 (0.586)
ROA $t-1$ * (Top 90 Decile ROA Dummy) $t-1$	-3.708 (0.534)	-13.160 (0.309)	-2.393 (0.725)
Median of industry ROA $t-1$	-1.756 (0.958)	-38.767 (0.552)	9.584 (0.804)
Firm size $t-1$ (=Log of Net Premiums Written)	0.101 (0.523)	0.078 (0.812)	0.111 (0.542)
Leverage $t-1$ (=Liability/Assets)	-0.101 (0.937)	1.805 (0.466)	-0.629 (0.673)
Herfindahl Index of Lines of Business $t-1$	1.305 (0.231)	3.962* (0.059)	0.346 (0.785)
Herfindahl Index of States of Business $t-1$	0.137 (0.849)	-0.139 (0.924)	0.157 (0.846)
Fraction of NPW from Personal Lines $t-1$	0.272 (0.704)	2.513 (0.038)	-0.721 (0.439)
Fraction of NPW from Commercial Long Tail Lines $t-1$	-1.559** (0.018)	-2.300 (0.129)	-1.375* (0.064)
Log of Board Size t	-0.107 (0.868)	-1.195 (0.366)	-0.030 (0.967)
(Dummy equal to one if fraction of outside directors > 0.6) t	-0.135 (0.782)	-0.916 (0.382)	0.136 (0.806)
Sample Size	211	211	211
Turnover event counts	33	9	24
Log likelihood	-86.728	-100.891	-100.891
Pseudo-R square	0.0522	0.0897	0.0897

Table 8**Implied annual probability of turnover, routine turnover, and non-routine turnover based on the logistic regression results by organizational form and ownership structure in Table 6**

This table reports the economic significance of the logistic regression results in Table 6 for the sample period during 1993-2006. The value for full sample is calculated based on Table 6-1. Results for subsamples for each type of organizational form and ownership structure are based on Table 7. Medians of other independent variables are used in calculating the predicted turnover probability.

	Turnover Possibility (percent)		
	(1)	(2)	
Organizational Form and Ownership Structure	90 percentile of ROA	10 percentile of ROA	(2)-(1)/ (1)
Full sample	5.30	7.86	0.48
Mutual	5.74	8.27	0.44
Non-family-owned closely held firms	7.47	8.80	-0.15
Closely-held family firms, CEO is a family member	2.33	2.38	0.03
Closely-held family firms, CEO is not a family member	5.66	6.76	0.19
Publicly-listed family firms, CEO is a family member	1.72	3.80	1.21
Publicly-listed family firms, CEO is not a family member	3.82	15.28	3.00
Non-family-owned publicly listed firms	9.49	12.34	0.30
Reciprocal	2.36	10.58	3.49
Other Main Business	21.01	20.29	-0.03

	Routine Turnover Possibility (percent)		
	(3)	(4)	
Organizational Form and Ownership Structure	90 percentile of ROA	10 percentile of ROA	(4)-(3)/ (3)
Full sample	3.30	4.10	0.24
Mutual	3.74	4.99	0.33
Non-family-owned closely held firms	4.10	1.33	-0.65
Closely-held family firms, CEO is a family member	2.55	2.24	-0.12
Closely-held family firms, CEO is not a family member	3.37	3.37	0.00
Publicly-listed family firms, CEO is a family member	3.58	0.79	-0.78
Publicly-listed family firms, CEO is not a family member	5.38	7.03	0.31
Non-family-owned publicly listed firms	2.75	3.44	0.25
Reciprocal	0.72	6.63	8.26
Other Main Business	5.73	1.42	-0.75

	Non-routine Turnover Possibility (percent)		
	(5)	(6)	
Organizational Form and Ownership Structure	90 percentile of ROA	10 percentile of ROA	(6)-(5)/(4)
Full sample	1.71	3.22	0.88
Mutual	2.14	3.56	0.66
Non-family-owned closely held firms	4.93	6.47	3.13
Closely-held family firms, CEO is a family member	0.07	0.11	0.42
Closely-held family firms, CEO is not a family member	2.03	3.27	0.61
Publicly-listed family firms, CEO is a family member	0.32	1.44	44.28
Publicly-listed family firms, CEO is not a family member	0.69	5.21	6.52
Non-family-owned publicly listed firms	7.39	7.65	0.03
Reciprocal	1.83	2.98	0.63
Other Main Business	16.35	20.30	0.24

Table 9**Logistic regression results of comparison between organizational form and ownership structure**

This table reports logistic regression results for the sample period during 1993-2006. Panel A provide results of the mutual firms subsample vs. all stock firms subsample. Panel B provide results of the mutual firms subsample vs. publicly listed stock firms subsample. Panel C provide results of the publicly listed family firms vs. closely held family firms. Panel D provide results of the publicly-listed family firms and CEO is a family member vs. publicly-listed family firms and CEO is not a family member vs. non-family-owned publicly-listed firms. Panel E provide results of the closely-held family firms and CEO is a family member vs. closely-held family firms and CEO is not a family member vs. non-family-owned closely held firms. Column 1-3 provide results with dependent variable as the turnover, routine turnover, and non-routine turnover dummy variables, respectively. The dependent variables are listed on the top of the columns. $ROA_{t-1} * (\text{Top 90 Deciles ROA Dummy})_{t-1}$ is the interaction term of ROA_{t-1} and the dummy variable indicating that ROA_{t-1} in the top 90 deciles. The other independent variables are as defined in Table 1, Table 2 and Table3. *p-values* are in reported in parentheses below. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A. Mutual and All Stock Firm Subsample (Mutual vs. All Stock Companies)			
	Turnover t	Routine Turnover $_t$	Non-routine Turnover $_t$
	(1)	(2)	(3)
Intercept	-4.660** *	-4.949***	-5.963***
	(0.000)	(0.000)	(0.000)
ROA $_{t-1}$	-2.918* (0.069)	1.452 (0.556)	-6.862*** (0.001)
ROA $_{t-1}$ * (Top 90 Decile ROA Dummy) $_{t-1}$	3.997** (0.028)	0.826 (0.738)	7.436*** (0.0052)
Median of industry ROA $_{t-1}$	19.977** (0.019)	19.919* (0.065)	18.507 (0.163)
Firm size $_{t-1}$ (=Log of Net Premiums Written)	0.081** (0.011)	0.091** (0.025)	0.063 (0.209)
Leverage $_{t-1}$ (=Liability/Assets)	-0.225 (0.480)	-0.208 (0.612)	-0.208 (0.672)
Herfindahl Index of Lines of Business $_{t-1}$	-0.061 (0.752)	-0.457* (0.068)	0.495 (0.100)
Herfindahl Index of States of Business $_{t-1}$	-0.236 (0.146)	-0.379* (0.066)	0.02 (0.995)
Fraction of NPW from Personal Lines $_{t-1}$	-0.157 (0.327)	-0.267 (0.196)	0.008 (0.975)
Fraction of NPW from Commercial Long Tail Lines $_{t-1}$	-0.146 (0.375)	-0.196 (0.375)	-0.099 (0.679)
Log of Board Size $_t$	0.147 (0.263)	0.126 (0.458)	0.159 (0.433)
(Dummy equal to one if fraction of outside directors > 0.6) $_t$	0.091 (0.462)	-0.240 (0.117)	0.640*** (0.002)
Dummy for mutual firm $_{t-1}$ (=1 if mutual)	0.243** (0.040)	0.556*** (0.000)	-0.145 (0.412)
ROA $_{t-1}$ * Dummy for mutual firm $_{t-1}$	-0.674 (0.828)	-4.748 (0.223)	2.818 (0.602)
ROA $_{t-1}$ * Dummy for mutual firm $_{t-1}$ * (Dummy equal to one if fraction of outside directors > 0.6) $_t$	-1.1955 (0.707)	0.427 (0.912)	-2.797 (0.615)
Sample Size	7747	7747	7747
Turnover event counts	491	301	190
Log likelihood	-1805.64	-2113.458	-2113.458
Pseudo-R square	1	0.0203	0.0203

Panel B. Mutual and Publicly-Listed Firm Subsample (Mutual vs. All Publicly-Listed Companies)			
	Turnover _{<i>t</i>}	Routine Turnover _{<i>t</i>}	Non-routine Turnover _{<i>t</i>}
	(1)	(2)	(3)
Intercept	-4.413** * (0.000)	-5.292*** (0.000)	-5.105*** (0.000)
ROA _{<i>t-1</i>}	-5.712** (0.025)	4.057 (0.359)	-11.782*** (0.000)
ROA _{<i>t-1</i>} * (Top 90 Decile ROA Dummy) _{<i>t-1</i>}	4.286* (0.069)	1.275 (0.695)	5.948* (0.092)
Median of industry ROA _{<i>t-1</i>}	19.396* (0.053)	23.732* (0.063)	9.860 (0.529)
Firm size _{<i>t-1</i>} (=Log of Net Premiums Written)	0.070* (0.069)	0.082* (0.091)	0.043 (0.479)
Leverage _{<i>t-1</i>} (=Liability/Assets)	-0.610 (0.110)	-0.655 (0.178)	-0.469 (0.429)
Herfindahl Index of Lines of Business _{<i>t-1</i>}	-0.214 (0.386)	-0.873*** (0.008)	0.590 (0.116)
Herfindahl Index of States of Business _{<i>t-1</i>}	-0.216 (0.301)	-0.437* (0.096)	0.254 (0.449)
Fraction of NPW from Personal Lines _{<i>t-1</i>}	-0.321 (0.132)	-0.626** (0.023)	0.068 (0.834)
Fraction of NPW from Commercial Long Tail Lines _{<i>t-1</i>}	-0.078 (0.706)	-0.156 (0.582)	-0.008 (0.979)
Log of Board Size _{<i>t</i>}	0.367** (0.040)	0.474** (0.038)	0.234 (0.397)
(Dummy equal to one if fraction of outside directors > 0.6) _{<i>t</i>}	0.088 (0.556)	-0.178 (0.326)	0.566** (0.027)
Dummy for mutual firm _{<i>t-1</i>} (=1 if mutual)	0.028 (0.873)	0.718*** (0.007)	-0.695*** (0.007)
ROA _{<i>t-1</i>} * Dummy for mutual firm _{<i>t-1</i>}	1.820 (0.617)	-7.397 (0.161)	7.708 (0.179)
ROA _{<i>t-1</i>} * Dummy for mutual firm _{<i>t-1</i>} * (Dummy equal to one if fraction of outside directors > 0.6) _{<i>t</i>}	-1.325 (0.682)	-0.410 (0.920)	-2.282 (0.678)
Sample Size	4977	4977	4977
Turnover event counts	357	222	135
Log likelihood	-1268.58	-1484.401	-1484.401
Pseudo-R square	6	0.0242	0.0242

Panel C. Firms with Concentrated Ownership (Family Firm) Subsample (Publicly-Listed Family Firms vs. Closely-Held Family Firms)			
	Turnover _{<i>t</i>}	Routine Turnover _{<i>t</i>}	Non-routine Turnover _{<i>t</i>}
	(1)	(2)	(3)
Intercept	-4.218*** (0.002)	-3.289** (0.046)	-8.341*** (0.001)
ROA _{<i>t-1</i>}	-2.449 (0.311)	0.475 (0.882)	-6.845* (0.067)
ROA _{<i>t-1</i>} * (Top 90 Decile ROA Dummy) _{<i>t-1</i>}	6.177** (0.041)	1.681 (0.659)	13.119** (0.011)
Median of industry ROA _{<i>t-1</i>}	17.942 (0.304)	-0.089 (0.996)	59.922* (0.074)
Firm size _{<i>t-1</i>} (=Log of Net Premiums Written)	-0.010 (0.888)	-0.022 (0.801)	0.010 (0.940)
Leverage _{<i>t-1</i>} (=Liability/Assets)	1.159* (0.079)	1.153 (0.141)	1.287 (0.281)
Herfindahl Index of Lines of Business _{<i>t-1</i>}	0.555 (0.174)	0.131 (0.788)	1.305* (0.083)
Herfindahl Index of States of Business _{<i>t-1</i>}	-0.532 (0.114)	-0.652 (0.103)	-0.312 (0.602)
Fraction of NPW from Personal Lines _{<i>t-1</i>}	0.256 (0.340)	-0.050 (0.877)	0.921* (0.052)
Fraction of NPW from Commercial Long Tail Lines _{<i>t-1</i>}	-0.054 (0.865)	-0.246 (0.523)	0.384 (0.474)
Log of Board Size _{<i>t</i>}	-0.006 (0.980)	-0.023 (0.937)	0.051 (0.908)
(Dummy equal to one if fraction of outside directors > 0.6) _{<i>t</i>}	-0.379 (0.131)	-0.496 (0.113)	-0.136 (0.743)
Dummy for publicly listed family firm _{<i>t-1</i>}	0.741** (0.014)	0.326 (0.423)	1.235** (0.011)
ROA _{<i>t-1</i>} * Dummy for publicly listed family firm _{<i>t-1</i>}	-5.166 (0.131)	0.278 (0.956)	-9.512** (0.047)
Sample Size	2590	2590	2590
Turnover event counts	115	79	36
Log likelihood	-457.696	-520.008	-520.008
Pseudo-R square	0.0274	0.0407	0.0407

Panel D. Publicly-Listed Firms Subsample			
	Turnover $_t$	Routine Turnover $_t$	Non-routine Turnover $_t$
	(1)	(2)	(3)
Intercept	-3.477* (0.080)	-3.499 (0.173)	-5.699* (0.062)
ROA $_{t-1}$	-4.362 (0.259)	6.511 (0.354)	-9.659** (0.038)
ROA $_{t-1}$ * (Top 90 Decile ROA Dummy) $_{t-1}$	7.733* (0.059)	2.645 (0.642)	9.387 (0.135)
Median of industry ROA $_{t-1}$	7.323 (0.728)	4.116 (0.883)	5.079 (0.868)
Firm size $_{t-1}$ (=Log of Net Premiums Written)	-0.050 (0.591)	-0.040 (0.742)	-0.052 (0.708)
Leverage $_{t-1}$ (=Liability/Assets)	-0.632 (0.522)	-1.750 (0.171)	1.072 (0.495)
Herfindahl Index of Lines of Business $_{t-1}$	0.370 (0.494)	-0.226 (0.766)	0.861 (0.260)
Herfindahl Index of States of Business $_{t-1}$	-0.519 (0.280)	-0.699 (0.307)	-0.198 (0.771)
Fraction of NPW from Personal Lines $_{t-1}$	-0.129 (0.766)	-0.810 (0.199)	0.538 (0.372)
Fraction of NPW from Commercial Long Tail Lines $_{t-1}$	0.086 (0.860)	-0.023 (0.974)	0.193 (0.777)
Log of Board Size $_t$	1.121** (0.019)	1.331** (0.028)	0.852 (0.251)
(Dummy equal to one if fraction of outside directors > 0.6) $_t$	-0.118 (0.673)	-0.548 (0.133)	0.619 (0.183)
Dummy for publicly-listed family firms, CEO is a family member $_{t-1}$	-1.027*** (0.009)	-0.539 (0.313)	-1.543** (0.02)
Dummy for publicly-listed family firms, CEO is not a family member $_{t-1}$	0.495 (0.127)	0.506 (0.317)	0.544 (0.213)
ROA $_{t-1}$ * Dummy for publicly-listed family firms, CEO is a family member $_{t-1}$	-3.336 (0.547)	-9.880 (0.216)	-3.302 (0.721)
ROA $_{t-1}$ * Dummy for publicly-listed family firms, CEO is not a family member $_{t-1}$	-5.591 (0.256)	-6.940 (0.368)	-5.297 (0.416)
Sample Size	985	985	985
Turnover event counts	80	44	36
Log likelihood	-260.842	-304.290	-304.290
Pseudo-R square	0.0601	0.0850	0.0850

Panel E. Closely-Held Firms Subsample			
	Turnover _{<i>t</i>}	Routine turnover _{<i>t</i>}	Non-routine turnover _{<i>t</i>}
	(1)	(2)	(3)
Intercept	-2.671** (0.040)	-4.061** (0.020)	-2.609 (0.173)
ROA _{<i>t-1</i>}	1.168 (0.727)	4.898 (0.373)	-1.953 (0.629)
ROA _{<i>t-1</i>} * (Top 90 Decile ROA Dummy) _{<i>t-1</i>}	2.629 (0.367)	-0.744 (0.851)	6.621 (0.122)
Median of industry ROA _{<i>t-1</i>}	22.033 (0.179)	8.730 (0.672)	40.432 (0.125)
Firm size _{<i>t-1</i>} (=Log of Net Premiums Written)	-0.020 (0.774)	0.049 (0.604)	-0.120 (0.238)
Leverage _{<i>t-1</i>} (=Liability/Assets)	1.022 (0.102)	0.882 (0.280)	1.183 (0.209)
Herfindahl Index of Lines of Business _{<i>t-1</i>}	0.298 (0.398)	0.076 (0.867)	0.605 (0.270)
Herfindahl Index of States of Business _{<i>t-1</i>}	-0.347 (0.217)	-0.369 (0.316)	-0.326 (0.440)
Fraction of NPW from Personal Lines _{<i>t-1</i>}	0.293 (0.253)	0.189 (0.560)	0.491 (0.232)
Fraction of NPW from Commercial Long Tail Lines _{<i>t-1</i>}	-0.338 (0.219)	-0.248 (0.489)	-0.471 (0.255)
Log of Board Size _{<i>t</i>}	-0.263 (0.225)	-0.264 (0.339)	-0.228 (0.504)
(Dummy equal to one if fraction of outside directors > 0.6) _{<i>t</i>}	-0.119 (0.632)	-0.387 (0.248)	0.228 (0.539)
Dummy for closely-held family firm, CEO is a family member _{<i>t-1</i>}	-1.265*** (0.000)	-0.590 (0.136)	-2.306*** (0.000)
Dummy for closely-held family firm, CEO is not a family _{<i>t-1</i>}	-0.180 (0.556)	0.284 (0.508)	-0.643 (0.145)
ROA _{<i>t-1</i>} * Dummy for closely-held family firm, CEO is a family member _{<i>t-1</i>}	-0.077 (0.985)	-0.309 (0.958)	-2.981 (0.616)
ROA _{<i>t-1</i>} * Dummy for closely-held family firm, CEO is not a family member _{<i>t-1</i>}	-5.244 (0.191)	-8.441 (0.175)	-2.845 (0.575)
Sample Size	2770	2770	2770
Turnover event counts	134	79	55
Log likelihood	-512.403	-589.583	-589.583
Pseudo-R square	0.0450	0.0601	0.0601

Table 10
Median annual firm performance (Industry median adjusted ROA in percentage)
during years surrounding CEO turnover

	<i>t-3</i>	<i>t-2</i>	<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
Panel A. Turnover Events							
Mutual	-0.348	-0.329	-0.325	-0.347	-0.122	0.011	0.191
Close-held family firms, CEO is a family member	1.066	-0.208	-0.958	0.752	0.614	0.230	0.425
Close-held family firms, CEO is not a family member	-0.037	2.148	0.804	0.717	0.731	-0.077	1.370
Non-family-owned closely held firms	0.076	0.420	0.601	-0.630	0.572	-0.018	-0.383
Publicly-listed family firms, CEO is a family member	0.252	-1.252	0.004	0.863	0.844	-0.008	1.728
Publicly-listed family firms, CEO is not a family member	0.950	0.777	-0.474	-1.643	1.127	0.340	0.940
Non-family-owned publicly listed firms	0.412	-0.220	-0.316	0.301	1.656	0.114	0.019
Reciprocal	-1.244	-1.256	-1.506	-0.229	-0.102	0.098	0.005
Other main business	1.941	1.938	0.796	0.410	1.851	2.120	1.892
All	-0.334	-0.146	-0.176	-0.186	0.288	0.166	0.278

	<i>t-3</i>	<i>t-2</i>	<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
Panel B. Routine Turnover							
Mutual	-0.348	-0.270	-0.427	-0.347	-0.007	0.076	0.201
Close-held family firms, CEO is a family member	1.120	0.193	1.083	1.670	0.804	0.641	0.816
Close-held family firms, CEO is not a family member	-0.035	1.227	-0.366	0.436	0.584	-0.519	0.159
Non-family-owned closely held firms	-1.418	-0.118	1.509	-0.534	0.686	0.333	-0.506
Publicly-listed family firms, CEO is a family member	0.546	-0.406	0.597	0.544	0.421	0.060	1.728
Publicly-listed family firms, CEO is not a family member	1.111	-0.508	-0.286	-1.872	1.283	0.742	0.947
Non-family-owned publicly listed firms	1.581	0.429	1.268	1.888	2.415	0.478	-0.243
Reciprocal	-1.813	-1.971	-3.383	-1.378	-1.267	-0.253	-0.954
Other main business	-1.444	0.800	1.359	3.494	4.089	3.920	3.979
All	-0.069	-0.182	-0.039	-0.058	0.446	0.191	0.271

	<i>t-3</i>	<i>t-2</i>	<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>
Panel C. Non-Routine Turnover							
Mutual	-0.357	-0.677	-0.069	-0.348	-0.383	-0.117	0.191
Close-held family firms, CEO is a family member	-0.936	-4.707	-1.671	-3.195	-2.261	-2.542	-1.254
Close-held family firms, CEO is not a family member	-0.818	2.212	1.302	2.125	0.731	2.405	2.387
Non-family-owned closely held firms	0.942	0.426	-0.001	-0.927	0.512	-0.258	-0.191
Publicly-listed family firms, CEO is a family member	-3.605	-3.138	-0.743	17.264	3.651	-3.561	0.272
Publicly-listed family firms, CEO is not a family member	0.947	1.389	-0.748	-1.507	1.038	0.166	0.637
Non-family-owned publicly listed firms	0.227	-1.025	-0.867	-0.776	-0.158	-0.201	0.051
Reciprocal	-0.647	-0.723	-1.037	-0.044	0.378	0.636	1.244
Other main business	1.954	2.054	-0.323	0.217	1.315	1.592	1.572
All	0.098	-0.072	-0.268	-0.404	-0.019	0.003	0.317

Table 11**Bivariate probit model results of outside successions**

This table reports bivariate probit model results for the sample period during 1993-2006. Column 1 and 2 provide results with dependent variable as the outside succession and turnover for the full sample. Column 3 and 4 provide results for all non-family firms, respectively. The dependent variables are listed on the top of the columns. In column 1, Outside Succession is a dummy variable equal to one if an outsider is promoted to CEO condition on turnover. All other successions are coded as zero, i.e., family successions in family firms are considered as inside successions. In column 3, we repeat the regression by dropping all family firms. Thus, in column 3, outside successions coded as zero includes only inside successions. We omit the dummy of the non-family public listed firms and let it be the base firm structure. The other independent variables are as defined in Table 1, Table 2 and Table 3. *p-values* are reported in parentheses below.

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Full sample		All non-family firms	
	(1)	(2)	(3)	(4)
Independent Variables	Outside succession $_t$	Turnover $_t$	Outside succession $_t$	Turnover $_t$
Intercept	-0.222 (0.402)	-1.907*** (0.000)	-0.084 (0.764)	-2.148*** (0.000)
ROA $_{t-1}$	-0.356 (0.498)	-1.835*** (0.002)	-0.572 (0.320)	-2.148*** (0.003)
ROA $_{t-1}$ * (Top 90 Decile ROA Dummy) $_{t-1}$	1.279* (0.081)	2.051** (0.015)	0.853 (0.297)	1.873* (0.076)
Median of Industry ROA $_{t-1}$	-6.174* (0.059)	11.617*** (0.004)	-5.547 (0.114)	12.880*** (0.005)
Firm size $_{t-1}$ (=Log of Net Premiums Written)	-0.007 (0.604)	0.029** (0.071)	-0.024* (0.087)	0.051*** (0.005)
Leverage $_{t-1}$ (=Liability/Assets)	0.414*** (0.002)	-0.150 (0.329)	0.353*** (0.013)	-0.417** (0.021)
Herfindahl Index of Lines of Business $_{t-1}$	-0.033 (0.675)	-0.053 (0.569)	0.006 (0.940)	-0.186* (0.098)
Herfindahl Index of States of Business $_{t-1}$	0.131** (0.040)	-0.071 (0.350)	0.067 (0.331)	0.024 (0.790)
Fraction of NPW from Personal Lines $_{t-1}$	-0.428*** (0.000)	-0.086 (0.262)	-0.405*** (0.000)	-0.198** (0.045)
Fraction of NPW from Commercial Long Tail Lines $_{t-1}$	-0.025 (0.670)	-0.124* (0.098)	0.006 (0.929)	-0.120 (0.167)
Log of Board Size $_t$	-0.075 (0.169)	0.019 (0.769)	0.010 (0.870)	0.004 (0.962)
(Dummy equal to one if fraction of outside directors > 0.6) $_t$	0.186*** (0.000)	-0.017 (0.767)	0.237*** (0.000)	0.038 (0.586)
Dummy for Mutual $_{t-1}$	-0.430*** (0.000)	-0.062 (0.531)	-0.468*** (0.000)	-0.054 (0.591)
Dummy for Non-family-owned closely held firms $_{t-1}$	-0.065 (0.465)	-0.035 (0.766)	-0.102 (0.253)	0.0002 (0.999)
Dummy for Closely-held family firms, CEO is a family member $_{t-1}$	-2.173*** (0.000)	-0.546*** (0.000)		
Dummy for Closely-held family firms, CEO is not a family member $_{t-1}$	-0.014 (0.899)	0.039 (0.778)		
Dummy for Publicly-listed family firms, CEO is a family member $_{t-1}$	-6.433 (0.998)	-0.542*** (0.000)		
Dummy for Publicly-listed family firms, CEO is not a family member $_{t-1}$	0.232* (0.056)	0.201 (0.178)		
Dummy for Reciprocal $_{t-1}$	-0.352*** (0.001)	-0.009 (0.949)	-0.390*** (0.000)	0.021 (0.877)
Dummy for Other main business firm $_{t-1}$	0.393*** (0.002)	0.488*** (0.001)	0.394*** (0.002)	0.557*** (0.000)
Number of firm years	547	7334	432	4866

Table 12.1**Regression results of ROA model**

This table reports regression results for the full sample period during 1993-2006. The dependent variable is ROA. Three independent variables are included beside those in the turnover model: dummy variable for independent agency firm, percentage of assets in stocks, real estate, and mortgage and dummy variable for insurance group. Dummy for Turnover is equal to 1 if there was a CEO turnover event in a given year and 0 otherwise. Column (3) and (4) use instrumental variable method. Column (3) and (4) uses treatreg code and ivregress code in STATA, respectively. Predicted Turnover Probability is got using the instrumental variable method with board size and the dummy variable of board independence equal to one if fraction of outside directors > 0.6 . *p*-values are in reported in parentheses below. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: ROA _{<i>t</i>}			
	(1-OLS)	(2-OLS)	(3-IV)	(4-IV)
Intercept	-0.048*** (0.000)	-0.048*** (0.000)	-0.049*** (0.000)	-0.048*** (0.000)
Dummy for Turnover, (Predicted Turnover Probability) _{<i>t</i>}		0.0004 (0.886)	0.119 (0.544)	-0.012 (0.298)
Dummy for Independent Agency Firm _{<i>t</i>}	-0.003* (0.086)	-0.003* (0.086)	-0.002 (0.389)	-0.003* (0.091)
Percentage of Assets in Stocks, Real Estate, Mortgage _{<i>t</i>}	-0.030*** (0.000)	-0.030*** (0.000)	-0.029*** (0.000)	-0.030*** (0.000)
Dummy for Group Affiliation _{<i>t</i>}	-0.010*** (0.000)	-0.010*** (0.000)	-0.012** (0.012)	-0.010*** (0.000)
Leverage _{<i>t</i>} (=Liability/Assets)	-0.118*** (0.000)	-0.118*** (0.000)	-0.118*** (0.000)	-0.118*** (0.000)
Firm size (=Log of Net Premiums Written) _{<i>t</i>}	0.009*** (0.000)	0.009*** (0.000)	0.009*** (0.000)	0.009*** (0.000)
Herfindahl Index of Lines of Business _{<i>t</i>}	-0.001*** (0.001)	-0.001*** (0.001)	-0.001*** (0.004)	-0.001*** (0.001)
Herfindahl Index of States of Business _{<i>t</i>}	0.012*** (0.000)	0.012*** (0.000)	0.012*** (0.000)	0.012*** (0.000)
Fraction of NPW from Personal Lines _{<i>t</i>}	-0.016*** (0.000)	-0.016*** (0.000)	-0.016*** (0.000)	-0.016*** (0.000)
Fraction of NPW from Commercial Long Tail Lines _{<i>t</i>}	0.001 (0.750)	0.001 (0.748)	0.002 (0.566)	0.0004 (0.849)
Dummy for Mutual firm _{<i>t</i>}	-0.007* (0.087)	-0.007* (0.087)	-0.009 (0.151)	-0.007 (0.132)
Dummy for Non-family-owned closely held firms _{<i>t</i>}	-0.004 (0.387)	-0.004 (0.386)	-0.007 (0.375)	-0.003 (0.506)
Dummy for Closely-held family firms, CEO is family member _{<i>t</i>}	0.001 (0.816)	0.001 (0.814)	0.004 (0.569)	0.001 (0.836)
Dummy for Closely-held family firms, CEO is not family member _{<i>t</i>}	0.015*** (0.004)	0.015*** (0.004)	0.012 (0.201)	0.016*** (0.003)
Dummy for Publicly-listed family firms, CEO is family member _{<i>t</i>}	0.021*** (0.001)	0.021*** (0.001)	0.021*** (0.003)	0.020*** (0.001)
Dummy for Publicly-listed family firms, CEO is not family member _{<i>t</i>}	-0.011 (0.305)	-0.011 (0.303)	-0.025 (0.355)	-0.009 (0.414)
Dummy for Reciprocal firm _{<i>t</i>}	-0.004 (0.488)	-0.004 (0.488)	-0.004 (0.564)	-0.003 (0.571)
Dummy for Other Main Business firm _{<i>t</i>}	0.014** (0.024)	0.014** (0.025)	0.001 (0.961)	0.016** (0.013)
Sample Size	5185	5185	5185	5185

Table 12.2**Regression results of ROA model**

This table reports regression results for the full sample period during 1993-2006. The dependent variable is ROA. Three independent variables are included beside those in the turnover model: dummy variable for independent agency firm, percentage of assets in stocks, real estate, and mortgage and dummy variable for insurance group. Dummy for Turnover is equal to 1 if there was a CEO turnover event in a given year and 0 otherwise. Column (3) and (4) use instrumental variable method. Column (3) and (4) uses treatreg code and ivregress code in STATA, respectively. Predicted Turnover Probability is got using the instrumental variable method with board size and the dummy variable of board independence equal to one if fraction of outside directors > 0.6 *p*-values are in reported in parentheses below. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: ROA _{<i>t</i>}			
	(1-OLS)	(2-OLS)	(3-IV)	(4-IV)
Intercept	-0.048*** (0.000)	-0.044*** (0.000)	-0.044** (0.034)	-0.044*** (0.000)
Dummy for Turnover _{<i>t-1</i>} (Predicted Turnover Probability) _{<i>t-1</i>}		0.0004 (0.223)	0.381 (0.440)	0.003 (0.885)
Dummy for Independent Agency Firm _{<i>t</i>}	-0.003* (0.086)	-0.003 (0.124)	0.001 (0.895)	-0.003 (0.118)
Percentage of Assets in Stocks, Real Estate, Mortgage _{<i>t</i>}	-0.030*** (0.000)	-0.032*** (0.000)	-0.035*** (0.002)	-0.031*** (0.000)
Dummy for Group Affiliation _{<i>t</i>}	-0.010*** (0.000)	-0.012*** (0.000)	-0.017** (0.043)	-0.012*** (0.000)
Leverage _{<i>t</i>} (=Liability/Assets)	-0.118*** (0.000)	-0.118*** (0.000)	-0.123*** (0.000)	-0.118*** (0.000)
Firm size (=Log of Net Premiums Written) _{<i>t</i>}	0.009*** (0.000)	0.009*** (0.000)	0.008*** (0.000)	0.009*** (0.000)
Herfindahl Index of Lines of Business _{<i>t</i>}	-0.001*** (0.001)	-0.001*** (0.001)	-0.001*** (0.123)	-0.001*** (0.001)
Herfindahl Index of States of Business _{<i>t</i>}	0.012*** (0.000)	0.011*** (0.000)	0.009 (0.149)	0.010*** (0.000)
Fraction of NPW from Personal Lines _{<i>t</i>}	-0.016*** (0.000)	-0.016*** (0.000)	-0.014** (0.025)	-0.016*** (0.000)
Fraction of NPW from Commercial Long Tail Lines _{<i>t</i>}	0.001 (0.750)	-0.001 (0.734)	0.005 (0.573)	-0.001 (0.735)
Dummy for Mutual firm _{<i>t</i>}	-0.007* (0.087)	-0.007 (0.113)	-0.016 (0.297)	-0.007 (0.155)
Dummy for Non-family-owned closely held firms _{<i>t</i>}	-0.004 (0.387)	-0.004 (0.420)	-0.014 (0.413)	-0.004 (0.496)
Dummy for Closely-held family firms, CEO is family member _{<i>t</i>}	0.001 (0.816)	0.001 (0.834)	0.008 (0.546)	0.001 (0.817)
Dummy for Closely-held family firms, CEO is not family member _{<i>t</i>}	0.015*** (0.004)	0.016*** (0.004)	0.004 (0.817)	0.017*** (0.003)
Dummy for Publicly-listed family firms, CEO is family member _{<i>t</i>}	0.021*** (0.001)	0.016** (0.013)	0.013 (0.300)	0.015** (0.016)
Dummy for Publicly-listed family firms, CEO is not family member _{<i>t</i>}	-0.011 (0.305)	0.030*** (0.006)	-0.026 (0.734)	0.031*** (0.007)
Dummy for Reciprocal firm _{<i>t</i>}	-0.004 (0.488)	-0.005 (0.404)	-0.008 (0.530)	-0.004 (0.467)
Dummy for Other Main Business firm _{<i>t</i>}	0.014** (0.024)	0.013* (0.053)	-0.027 (0.619)	0.013* (0.055)
Sample Size	5185	4805	4805	4805

Table 13**Results of actual and predicted turnover**

This table reports results of the comparison of actual and predicted turnover for the full sample period during 1993-2006. The predicted turnover is calculated based on the logistic regression model in Table 5 (Column 4). Panel A presents the result based on the 50% cutoff probability. Panel B presents the result based on actual turnover rate (6.62%) cutoff probability.

Panel A. 50% Cutoff Probability (First 4174 observations as turnover and the other 4174 as no turnover)			
		Predicted Outcomes	
		Turnover Yes	Turnover No
Actual Outcomes	Turnover Yes	66%	34%
	Turnover No	49%	51%
Panel B. 6.62% Cutoff Probability (First 553 observations as turnover and the other 7795 as no turnover)			
		Predicted Outcomes	
		Turnover Yes	Turnover No
Actual Outcomes	Turnover Yes	16%	84%
	Turnover No	6%	94%

Figure 1: Insurer's organizational form and ownership structure in this study



