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AUDITOR CHOICE, AUDIT FEES AND INTERNAL GOVERNANCE IN  
FAMILY FIRMS

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AUDITOR CHOICE, AUDIT FEES AND INTERNAL GOVERNANCE IN  
FAMILY FIRMS

by  
HE Shaohua

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## ABSTRACT

### Auditor choice, Audit Fees and Internal Governance in Family Firms

by

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Master of Philosophy

I study the role of auditing in mitigating agency concerns in family firms. Family firms face less severe agency problems due to the separation of ownership and control (Type 1) but more severe agency problems between controlling and non-controlling shareholders (Type 2). As family firms make up a large part of most free enterprise economies it is important to examine these two agency problems with respect to auditor choice and audit effort. I find that family firms are more likely to choose a specialist auditor than nonfamily firms, consistent with the argument that family firms need to signal their non-expropriating behaviors by choosing specialist auditors. I further find that audit fees are lower in family firms compared to non-family firms, consistent with the hypothesis that the Type 1 agency conflict dominates the Type 2 agency conflict in the determination of audit effort and pricing. Moreover, consistent with prior literature that states that effective internal governance demands a quality auditor and more audit effort irrespective of ownership structure, I find that the positive association between family ownership and specialist auditor choice is stronger when internal governance is strong and the negative relation between audit fees and family ownership is weaker when the internal governance is strong. I find that these results on audit fees are robust to the use of alternative measures of concentrated influence such as CEO ownership, inside director ownership, and the presence of one or more founder directors. I also find that the effect of internal governance on audit fees is not limited to one or a few components of internal governance.

## DECLARATION

I declare that this is an original work based primarily on my own research, and I warrant that all citations of previous research, published or unpublished, have been duly acknowledged.

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(He Shaohua)

May 21, 2010

CERTIFICATE OF APPROVAL OF THESIS

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# **Auditor choice, Audit Fees and Internal Governance in Family Firms**

## **Chapter 1. Introduction**

Auditing has long been identified as playing a governance role in mitigating the agency concerns in firms. Jensen and Meckling (1976) hypothesize that auditing increases the value of the firm by reducing the incentive problems that arise when the manager does not own all the residual claims of the firm (Watts and Zimmerman 1983). Using a semi-structured interview, Cohen et al. (2002) show that auditors consider corporate governance as an important determinant of the audit process and plan their audit to mitigate the adverse effects of poor governance. The governance role of the external audit is also recognized by regulators (See the Security and Exchange Commission (SEC 1999) pronouncement on audit committee disclosure). The Sarbanes Oxley Act of 2002 established Public Company Accounting Oversight Board (PCAOB) as a new entity to oversee the audits of public companies with the explicit purpose of protecting the interests of their investors by producing informative, accurate, and independent audit reports. In the academic literature and regulatory pronouncements, auditing is recognized as an important element in reducing the information asymmetry between managers and investors. The auditing and accounting standards that form the basis of an audit are both designed to provide credible information to investors.

However, the corporate governance role of auditors in reducing the agency conflict between different classes of investors is less clear. Auditing standards address the issue of inter-investor information asymmetry only indirectly. For example, SAS 45 requires auditors to “place primary emphasis” on the adequacy of disclosure with regard to related party transactions. SAS 57 requires auditors to evaluate the reasonableness of management estimates if they affect financial statements. PCAOB’s Auditing Standard 5 requires auditors to evaluate the firm’s

controls with regard to potential material misstatements due to fraud and the possibility of management override of existing controls. One could argue that the disclosure of related party transactions helps reduce the information asymmetry between controlling shareholders who might indulge in such transactions and non-controlling shareholders who might be hurt by them. Paying particular attention to managerial override of controls also reduces insiders' ability to indulge in expropriating behavior. However, these standards do not change the primary mandate of auditors, which is to reduce the information asymmetry between managers and investors.

Although there is no direct mandate on auditors to address the inter-investor agency conflict, there is prior evidence that auditors help in mitigating these concerns. In the context of initial public offerings, many studies have shown that auditors reduce the informational differences between informed inside investors and the external investors to whom the stock is offered (Michaely and Shaw 1995; Beatty 1989; Menon and Williams 1991; Weber and Willenborg 2003). Auditors have been shown to help mitigate the agency concerns of foreign investors in privatized firms (Guedhami and Pittman 2006; Guedhami et al. 2009). In their study of East Asian economies, Fan and Wong (2005) show that the auditor can limit the ability of insider investors to manipulate accounting reports and hide any expropriation from external investors. Further, auditors can discourage self-dealing activities by insiders by pressing for improved disclosures of related party transactions.

The abovementioned studies suggest that auditors have the *capability* to improve corporate governance by reducing the agency concerns between informed and uninformed investors. But do they have the *incentive* to expend effort and other resources in the face of a highly competitive audit market? In the absence of explicit auditing standard requirements, auditors need other specific contextual incentives to devote effort and resources to reducing agency concerns between informed and uninformed investors. In the initial public offering context, inside investors need to attract capital from the external investors and are therefore motivated to reduce

informational differences between them and external investors. They are therefore likely to demand that the auditors decrease the information asymmetry between the inside investors who currently hold the shares and the outside investors who need to be attracted to buy the shares during and after the offering. This demand provides the requisite specific motivation for auditors to play a corporate governance role.

In the context of concentrated family ownership, the controlling owners might voluntarily choose auditing as a bonding mechanism (Jensen and Meckling 1976). The family owners would then provide the requisite motivation for the auditors to mitigate the agency concerns of non-family shareholders. On the other hand, if the private control benefits of family investors are higher than the benefits they obtain from bonding, they will not direct the auditors to reduce the information asymmetry between them and non-family investors. Family investors are influential in appointing the auditor, maintaining the contract and deciding their fees. In a competitive audit market, where there is no general mandate for auditors to reduce the agency concerns of minority investors, auditors are unlikely to voluntarily devote their effort and resources to do so against the wishes of family investors. In effect, even though the auditors might have the ability to mitigate the agency problem between controlling and non-controlling investors, the question remains as to whether they have sufficient incentive to do so. We argue that if a family firm appoints a strong, independent and effective board of directors, the bonding effect is more likely to prevail. On the other hand, if the board is not as strong, the private benefits effect is more likely to prevail.

In this thesis, I address the role of auditors in mitigating the two abovementioned agency conflicts by examining the effect of family ownership on auditor choice and audit effort. I find a positive association between family ownership and specialist auditor choice, and a negative association between family ownership and audit effort at the aggregate level. I then examine whether these relationships are different under different levels of board effectiveness in the second stage. I find that a positive association between family ownership and specialist

auditor choice is stronger when the board is more effective and that the negative association between family ownership and audit effort is weaker when the board is more effective.

My use of family firms for addressing this issue is motivated by two reasons. First, although ownership is more dispersed in the U.S. than in many other countries, nearly a third of the firms in S&P 500 index are characterized by founding family involvement (Anderson and Reeb 2003; Wang 2006), which allows me to examine the issue in a large sample of firms. Second, family controlled firms face less severe agency problems that arise from the separation of ownership and management (referred to as the Type 1 agency problem) but are characterized by more severe agency problems between controlling and non-controlling shareholders (referred to as the Type 2 agency problem)<sup>1</sup>. Investors face a less severe Type 1 agency problem because the controlling family is better informed about the operations of the firm and is therefore better able to directly monitor the value-relevance of managerial actions and decisions (Demsetz and Lehn 1985). This enables family firms to depend less on accounting reports to evaluate the performance of managers and, correspondingly, the managers feel less able to mislead the dominant investors by hiding the results of poor performance by opportunistically choosing accounting methods and estimates. Logically then, the auditors could save on verification procedures and costs, a fact that is likely to be reflected in lower audit fees in a competitive audit market<sup>2</sup>. On the other hand, the significant extent to which the family owns stock and controls board directors results in higher Type 2 agency problems (Anderson and Reeb 2003, 2004). Type 2 agency problems include the expropriation and enjoyment of private control benefits (such as related party transactions) by the family members, which might induce them to mislead non-family investors through accounting reports (Leuz et al. 2003). This possibility should result in a greater demand for audit effort by those

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<sup>1</sup> The reduction of the Type 1 agency problem is often referred to as the “alignment effect” and the exacerbation of the Type 2 agency problem is referred to as the “entrenchment effect”(Wang 2006).

<sup>2</sup> After the AICPA changed its code of ethics in 1979 and allowed free advertising by auditors, auditors faced increased competition at all levels (Sunder 2003).

family firms that want to allay fears of Type 2 agency problems. In effect, in the case of family controlled firms, two forces are at work on the audit fee: a decrease brought about by the lower level of Type 1 agency problem and an increase brought about by the higher level of Type 2 agency problem.

The effect of the trade-off between the two agency problems on auditor effort hinges on the incentives that the controlling family shareholders have for bonding behavior. If the controlling owners find that the gains from hiding private control benefits through less transparent reporting (Leuz et al. 2003) is lower than the gain from transparent reporting to minority shareholders, they are more likely to engage in bonding behavior. As part of their bonding behavior, they are more likely to have more effective internal governance<sup>3</sup> in place (Linck et al. 2008; Boone et al. 2007; Raheja 2005). In these firms, auditing will be used as a complementary mechanism to signal higher transparency and less expropriation by controlling shareholders. In order to support the bonding behavior, auditors will be expected by the family owners to improve transparency and mitigate the agency problem between them and the non-family shareholders. In this situation, even though less audit effort is needed to mitigate the Type 1 agency problem, it is compensated for by more audit effort that is needed to mitigate the Type 2 agency problem. Therefore, the audit effort demanded of the auditor is not necessarily reduced because of concentrated family ownership, resulting in a weaker relation between family ownership and audit fees. In contrast, in firms where the controlling insiders do not undertake board-based monitoring, auditors are less motivated to mitigate the Type 2 agency cost. In those firms, the negative relationship between family ownership and audit fee will be accentuated.

My examination of the relationship between auditor choice (audit fees) and family ownership confirms the above relationships. In the aggregate analysis, I find a

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<sup>3</sup> We use the term “internal governance” to denote board-based, committee-based and other internal mechanisms to improve transparency. We differentiate this type of governance from the “external” market-based governance that arises from the market for corporate control, product competition, and other market forces.

positive association between family ownership and specialist auditor choice, consistent with the signaling incentive of family owners, and a negative relation between family ownership and audit fee, consistent with the argument that the reduction of the Type 1 agency problem outweighs the increase of the Type 2 agency problem. I surmise from these results that the mandated role of the auditor in mitigating the Type 1 agency problem between managers and investors drives audit effort more than the role of auditors in reducing the Type 2 agency problem between controlling and non-controlling shareholders. In the differential analysis, consistent with my expectation, I find that the positive association between family ownership and specialist auditor choice is stronger for firms with a stronger board, and that the negative relationship between audit fee and family ownership is weaker for firms that have stronger board-based monitoring. I measure overall board-based monitoring strength using indices based on Larcker and Richardson (2004) and Carcello et al. (2002). I repeat the analysis with several components of board-based monitoring effectiveness and obtain similar results. Based on these results, I surmise that in situations where family controlled firms take steps to signal their transparency by having boards with strong monitoring effectiveness and choosing specialist auditors, auditors indeed play a governance role in mitigating the Type 2 agency problem.

My findings contribute to the current literature in several ways. It brings together the results of three strands of research: the role of auditors in mitigating the Type 1 agency problem between managers and investors; the moderating effect of ownership structure in auditors' mitigation of the Type 1 agency problem (Gul et al. 2003), and the governance role of auditors in mitigating the Type 2 agency problem (Fan and Wong 2005). My findings suggest that the auditors have the capability to mitigate the Type 2 agency problem but do not have a mandate to do so in a normal audit. However, given the proper incentives, auditors can mitigate the Type 2 agency problem. In this sense, my research complements the studies on an auditor's role in initial public offerings or in privatized firms seeking foreign investors alluded to earlier. My results validate the hypothesis that in some family firms that undertake

bonding effort, auditors are motivated to mitigate the Type 2 agency problem. By integrating the results of these three strands of literature, my study helps us to understand the complex interactions between auditing, governance, and ownership structure.

The next chapter provides a brief review of supporting literature and chapter 3 develops the hypotheses. The fourth chapter describes the research methodology and data. Chapter 5 describes the empirical results and discussions thereon. The last chapter presents my conclusions.



## Chapter 2. Literature Review

### 2.1 Studies on Family ownership

Current literature on family ownership focuses on (i) the firm performance effect, and (ii) the disclosure effect. If family ownership is not the *result* of a demand for governance, it could be considered exogenous and could result in a reduction of Type I agency conflicts, which in turn enhances firm performance (Jensen and Meckling 1976). Several studies document this improvement in performance (Anderson and Reeb 2003; Yermack 1996). On the other hand, the performance of family firms might be compromised because of tensions between family and business objectives (Lansberg 1983; Levinson 1971; Barnes and Hershon 1976) and the smaller pool of talent from which managers are selected (Burkart et al. 2003). The firm performance effect is studied by Villalonga and Amit (2006) who find that family ownership in Fortune-500 firms creates value when the founder serves as CEO of the family firm or as chairman with a hired CEO but not when heirs who succeed the founder serve as CEOs. Miller et al. (2007) find that the effect of family ownership on firm performance relies on the way in which family businesses are defined. Particularly in Fortune 1000 firms, including relatives as owners or managers shows they do not outperform in terms of market valuation whereas businesses with a lone founder outperform. To sum up, the effect of family ownership on performance seems to depend critically on whether the founder or successors are in charge.

Theoretically, the mitigation of the Type 1 agency problem reduces the ability of managers to hide their performance by being less transparent. In turn, this could lead to higher quality of earnings and greater disclosure of investor-relevant information. On the other hand, if the family owners enjoy private control benefits, they have an incentive to be less transparent (Leuz et al. 2003). Therefore, the effect of family ownership on corporate disclosure cannot be unambiguously predicted. Ali

et al. (2007) find that family firms report earnings that are more predictive of future cash flows and less distorted by opportunistic discretionary accruals compared to non-family firms. They also find that family firms are more likely to warn investors about bad news but are less likely to make voluntary disclosures about their corporate governance practices. Family firms also seem to attract more analysts and reduce analyst forecast dispersion and error. Their findings suggest that the effect of the reduced Type 1 agency problem dominates the potential increase in the Type 2 agency problem with regard to disclosures. In a study that supports these findings, Wang (2006) also shows that the earnings of family-owned firms exhibit higher quality, lower abnormal accruals, greater informativeness and fewer transitory components compared to non-family firms. In contrast to the above two papers, Anderson et al. (2009) find that family firms are more opaque than non-family firms and attribute this opacity to extraction of private control benefits by family firms.

## *2.2 Studies on management ownership*

A large number of studies have focused on the effect of management ownership on performance, disclosures, earnings quality, and auditing. Managerial or CEO ownership aligns managers' interest with that of the shareholders and thereby has the direct effect of reducing the Type 1 agency problem (Jensen and Meckling 1976)<sup>4</sup>. In contrast to family ownership, managerial ownership has no direct link to the Type 2 agency problem. In effect, a comparative study of CEO ownership and family ownership has the advantage of suggesting the incremental effect of Type 2 agency problem that applies only to family ownership.

Using a sample of US firms, Warfield et al. (1995) show a higher information content of earnings and lower discretionary accruals in firms with high managerial

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<sup>4</sup> Management ownership can also lead to entrenchment when the market for corporate control is curtailed by the adoption of poison pills and other antitakeover devices (Almazan and Suarez 2003; Barnhart et al. 2000; Claessens et al. 2002; Hu and Kumar 2004) or when managerial ownership exceeds a certain threshold (Yeo et al. 2002).

ownership. However, Cheng and Warfield (2005) indicate more earnings management in firms with high managerial stock ownership. In non-US markets, some studies (Gul et al. 2003; Gul et al. 2002; Jung and Kwon 2002) document the positive role of managerial/insider ownership on disclosure, while other studies (Oei et al. 2008; Gabrielsen et al. 2002; Yeo et al. 2002; García-Meca and Sánchez-Ballesta 2009) provide mixed evidence.

### *2.3 Studies on auditor choice*

Prior studies have investigated the effect of ownership on auditor choice. Wang et al. (2008) find a negative relationship between state ownership and “Big auditor” choice in the China. Guedhami et al. (2009) report that privatized firms worldwide become less (more) likely to appoint a Big Four auditor as state (foreign) ownership increases. Fan and Wong (2005) document a positive relationship between the Big auditor choice and the wedge of vote-cash flow rights in East Asia companies, thus showing how Asian family firms signal their motivations to small investors. To sum up, given the expectation of small investors that controlling shareholders expropriate assets and resources away from the firms, controlling shareholders (state or family) need to signal their incentives by the Big auditor choice when the benefit of doing so outweighs the cost.

Several studies examine the effect of internal governance on auditor choice. Hossain et al (2010) find firm-level internal governance is positively related to the firm’s Big N auditor choice in emerging markets. Lin and Liu (2009) report that strong internal governance has a positive effect on the Big N auditor choice in the China. In total, prior studies on non-US markets record a positive relationship between internal governance and the Big auditor choice.

### *2.4 Studies on auditor response and pricing*

Several studies have examined the role of auditors in mitigating the Type 1 agency problem that results in information asymmetry between managers and investors. Of particular relevance to our study is Gul et al. (2003) who show that (i) auditors respond to discretionary accruals by increasing their effort and hence the fees charged the client; and (ii) that the relation between discretionary accruals and audit fees is weaker for firms with high management ownership. They interpret this result to mean that in firms with high managerial ownership, there is less Type 1 agency problem and therefore there is less need for managers to opportunistically manage their earnings. Instead, the discretionary accruals estimated by managers are more likely to be value-relevant and therefore the auditors need to spend less verification and validation effort in auditing those accruals. Other studies (Teoh and Wong 1993; Gul 2006) also support the positive role of the auditor in mitigating the Type 1 agency problem.

Prior studies have also shown that auditors respond to the quality of disclosures by the firm. In fact, this is the assumption behind many studies on auditor independence (Frankel et al. 2002; Larcker and Richardson 2004; Ashbaugh et al. 2003) that use discretionary accruals as the indicator of audit quality. In other words, the assumption is that if the audit quality is good (the auditor is independent), the discretionary accruals will be lower. More directly, Bedard and Johnstone (2004) find that auditors plan more hours and increase billing rates in the face of earnings management risk. This is consistent with the current literature that links auditor effort to litigation risk (Simunic and Stein 1996; Pratt and Stice 1994; Simon and Francis 1988) on the one hand, and earnings management to litigation risk on the other hand (Heninger 2001; Barron et al. 2001). Abbott et al. (2006) show that due to asymmetric litigation effects, audit fees are related more to the positive rather than to negative earnings management risk. Consistent with Simunic's production view of auditing (Simunic 1980), these studies show that risk factors such as lax disclosure and earnings management by the client firm result in a higher "supply" of audit effort, resulting from the motivation of auditors to limit their litigation and reputation risks.

These studies support the view that in firms where the Type 1 agency cost is low as in the case of family firms and firms with high managerial ownership, auditors scale back their effort and this is reflected in lower audit fees.

The interaction between corporate governance and auditing is more complex than the production view of auditing would have us believe. Hay et al. (2006) argue that the pure production function view of auditing requires that the audit market be competitive and that the level of assurance delivered is constant for a given auditor across client firms. The first condition makes audit fees a function of the cost and the second condition gives a unique level of assurance at which the expected cost of auditor's risk from not providing the marginal unit of assurance (due to litigation and reputation risks faced by the auditor) is equated to the production cost of providing the marginal unit of assurance. However, the second condition might not be satisfied because the boards in different firms might demand incrementally different levels of auditing (Carcello et al. 2002). Similarly, I argue that the context (e.g., bonding or private benefits) might determine the incremental audit effort required from the auditor. Knechel and Willekens (2006) argue that these demand factors alter the audit effort provided by the auditor. In effect, the corporate governance effort required of the auditor is related more to the demand by the board rather than to the production function of the auditor, which is determined by auditing standards, litigation, and reputation risks.

Prior studies have documented the effect of ownership on audit fees. Mitra et al. (2007) show that institutional and management ownership is negatively associated with audit fees. The negative association between managerial ownership and audit fees is also shown in the international context by Nikkinen and Sahlstrom (2004). Vafeas and Waagelein (2007) show a negative relationship between insider ownership and audit fees.

### Chapter 3. Hypotheses Development

I use the evidence from prior studies and the aforesaid arguments to develop the hypotheses on the effect of family ownership and internal governance on auditor choice and audit fees.

Fan and Wong (2005) indicate that firms are more likely to signal their non-expropriating incentives by choosing a quality auditor when they face agency conflicts from the wedge between voting rights and cash flow rights. Given that nonfamily investors expect family owners to expropriate and then discount the stock price, family firms are more likely to choose specialist auditors to signal to the nonfamily investors about their non-expropriation motivation compared to nonfamily firms that do not have so serious Type 2 agency problems as the family firms do. I thus put forward the following hypothesis:

*Hypothesis H<sub>1a</sub>: all else equal, family firms are more likely to choose specialist auditors than nonfamily firms.*

From Ali et al. (2007) discussed above, I expect that the effect of Type 1 agency problem dominates the Type 2 agency problem for family firms in the auditor's pricing of their services. Based on the arguments presented earlier, I formulate the following hypothesis on the aggregate relation between family ownership and audit fees.

*Hypothesis H<sub>1b</sub>: all else equal, audit fee for family firms is lower than for non-family firms.*

My discussion of the prior literature on the response of auditors to the presence of different levels of board effectiveness indicates that for family firms for which insiders' private benefits are dominated by the need to signal transparency to minority shareholders, the positive relationship between specialist auditor choice and family ownership should be stronger and the negative relation between audit fee and family ownership should be weaker. On the other hand, for family firms for which the insiders' private benefits dominate the need to signal transparency to minority shareholders, the positive relationship between specialist choice and family ownership should be weaker and the negative relation between audit fee and family ownership should be stronger. Based on this reasoning, I hypothesize the following differential relation between specialist auditor choice/audit fee and family ownership in the presence of differential board strengths.

*Hypothesis H<sub>2a</sub>: all else equal, the positive relation between specialist auditor choice and family ownership is stronger in the presence of stronger boards compared to firms with weaker boards.*

*Hypothesis H<sub>2b</sub>: all else equal, the negative relationship between audit fee and family ownership is weaker in the presence of stronger boards compared to firms with weaker boards.*

Furthermore, the strong board and good governance practices help reduce the reputation and litigation risks that specialist auditors face and therefore the specialist premiums are relatively lower than in other firms with weak internal governance. I thus put forward the following hypothesis:

*Hypothesis H<sub>2c</sub>: all else equal, the specialist auditor premium is smaller in the presence of stronger boards compared to firms with weaker boards.*

## Chapter 4. Methodology and Data

### 4.1 Research methodology

My basic specialist auditor choice model is similar to the auditor choice model used by Fan and Wong (2005) that controls for the following well-documented factors: (i) the scale and scope of the audit measured by the client firm size; (ii) audit risk captured by two variables, the firm's financial leverage and its return on assets. To test  $H_{1a}$ , I employ the following model:

$$\begin{aligned} SPECIALIST = \beta_0 + \beta_1 LNMVE + \beta_2 LEVE + \beta_3 ROA + \beta_4 OWN \\ + Industry\ effects + Year\ effects + \varepsilon \end{aligned} \quad (1)$$

In the above model,  $OWN = Family\ or\ FamilyPlus$  is the experimental variable. *Family* is coded one if firm has family ties which go back a generation or two to the founder and play a key role in both ownership ( $\geq 20\%$ ) and board membership. *FamilyPlus* is coded one if *Family* is valued one or the firm has at least one founder who sits in the board as well as there being dual class stock that creates a wedge between cash flow rights and control rights in the firm. If the coefficient  $\beta_4$  is positive and significant in the corresponding regressions, it validates Hypothesis H1a.

Some earlier studies, such as Anderson and Reeb (2003, 2004) and Ali et al. (2007), do not impose a minimum ownership criterion for identifying a firm as a family firm. Hutton (2007) gives examples from the Ali et al. (2007) sample where the family influence is quite low – like Percy Chubb who was a non-voting director on Chubb Co. directors. While Percy Chubb is a descendent of Chubb Co.'s founder, his share ownership in the firm is extremely low. It is debatable whether one could argue that the family has incentives to monitor the managers very carefully if they do not have significant ownership stakes. Other studies such as Ang et al. (1992),



Barontini and Capiro (2005), Barth et al. (2005), impose significant threshold restrictions either on ownership or voting rights or both.

Prior literature has shown that founder presence on the board seems to reduce agency costs more than heir presence. What seems to matter is the incentive and interest that the family has in the firm. A high ownership stake signals such interest and incentive. Based on earlier literature on management ownership, auditor response (audit effort) can be expected in case of concentrated ownership. Therefore, I use the definition of family firm using a threshold restriction.

My basic audit fee model, based on the theoretical constructs of Simunic (1980) is similar to the one used by Ashbaugh et al. (2003) that controls for the following well-documented factors: (i) client firm's auditor choice measured by an indicator variable for the Big-4 auditors; (ii) the scale and scope of the audit measured by the client firm size; (iii) the complexity of the audit measured by the ratio of market to book value of equity using the reasoning that intangible growth options are included in the firm's market value of equity but not in its book value; (iv) demand for additional audit work unrelated to ownership structure, measured by two variables – an indicator variable for merger or acquisition activity and a financing indicator variable that captures material capital infusion in the form of either debt or equity; and (v) audit risk captured by five variables - the firm's financial leverage, the return on assets, the amount of inventory and accounts receivables relative to total assets, an indicator variable for loss-making firms, and an indicator variable if the firm reports special items. Firm performance variables such as ROA, market-to-book ratio, and the indicator variable for loss affect a myriad of risk factors such as litigation risk, reputation loss, and the potential for financial distress. Consistent with Simunic (1980) and Ashbaugh et al. (2003), I also include industry dummies as control variables. Additionally, I include year dummies to account for secular changes in audit fees over time.

To test  $H_{1b}$ , I include an indicator variable for family ownership and/or influence in addition to the controls mentioned above. The model is:

$$\begin{aligned}
LNFEES = & \beta_0 + \beta_1BIG + \beta_2LNMVE + \beta_3MA + \beta_4FINANCING + \beta_5MB + \beta_6LEVE \\
& + \beta_7ROA + \beta_8INVREC + \beta_9LOSS + \beta_{10}SPECIAL + \beta_{11}OWN \\
& + Industry\ effects + Year\ effects + \varepsilon
\end{aligned}
\tag{2}$$

In the above model, OWN (= *Family or FamilyPlus*) is the experimental variable. In addition, we also examine the effect of *CEO Holdings*, *Insider Holdings* (the fraction of outstanding shares held by insider directors) and *Founder* (indicator variable if one or more of the directors are the founder(s) of the firm). The dependent variable, *LNFEES* is the log of audit fees. The full definitions of the dependent, control, and experimental variables are given in Table 1. If the coefficient  $\beta_{11}$  is negative and significant in the corresponding regressions, it validates Hypothesis H1b.

Insert Table 1 here

To test hypothesis H<sub>2a</sub> and H<sub>2b</sub>, I need to measure the strength of the internal corporate governance that is independent of the ownership structure. Although there is extensive research on the role of internal corporate governance such as board effectiveness and CEO power, only recently have there been some attempts to aggregate these into indices in a manner similar to the shareholder rights governance index proposed by Gompers et al. (2003). I use two indices to measure this strength.

I base the first index on Carcello et al. (2002) who show that the audit fee is positively associated with effective boards. In particular, they show that board independence measured by the percentage of independent directors on the board, the board diligence measured by the number of meetings attended, and board expertise measured by the number of outside directorships held in other corporations by non-management directors are all positively associated with the audit fee. I build on their model and use an index (*GIndexI*) that aggregates the following: board independence

(measured as the percentage of outside directors); board diligence (measured as the number of meetings held<sup>5</sup>); audit committee independence (measured by the percentage<sup>6</sup> of non-affiliated outside directors on the audit committee); board expertise (measured as the percentage of financial experts on the board + number of directorships held by outside directors); and (negative) CEO power (indicator variable if CEO is also the chairman or founder or sole insider). Carcello et al. (2002) provide justification for including board independence, board diligence and the number of directorships held by board numbers; Abbott et al. (2003) provide justification for audit committee independence; Carcello et al. (2006) and Krishnan and Visvanathan (2009) provide justification for including financial expertise separately in the board expertise variable; Gul and Leung (2004) and García-Meca and Sánchez-Ballesta (2009) provide justification for including CEO power<sup>7</sup>. I scale all the governance variables to range from 0 to 1, add them to get a total measure of CG, and adjust for the industry-year mean of the total measure to obtain the index<sup>8</sup> and classify the firms that have above-median index as “Good CG” firms and those with below-median index as “Poor CG” firms.

My second index (*GIndexII*) is based on Larcker et al. (2007). Their index spans a larger number of factors. For example, the board independence variable includes the percentage of female directors, which is consistent with the finding that boards with female directors monitor company management more closely (Adams and Ferreira 2009), have less earnings management (Gul et al. 2007), and demand more auditing (Gul et al. 2008). Consistent with their analysis, I aggregate the following in my construction of the index: board independence (measured as the percentage of

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<sup>5</sup> All variables that are not indicator variables or fractions are scaled to a value between 0 and 1 by dividing by the maximum value obtained in the sample.

<sup>6</sup> The terms percentage and fraction are used interchangeably and denote the fraction between 0 and 1.

<sup>7</sup> The use of CEO Power rather than CEO duality is based on Dechow et al. (1996).

<sup>8</sup> Use of principal component analysis instead of simple aggregation does not change the result. It is not clear whether a different weighted aggregation of these factors gives a better indication of internal corporate governance. Therefore, we present the results using simple aggregation. The results based on principal component analysis of CG are available and will be provided on request.

outsiders – percentage of affiliated directors + percentage of female directors); board diligence (measured as the scaled number of meetings held + fraction of directors who attend more than 75% of the meetings); board experience (measured as the tenure given by the average number of years the directors have served on the board + percentage of directors who are above 70 years of age); board and audit committee sizes (board size + audit committee size); the busy directors (fraction of outside directors who serve on four or more boards + fraction of inside directors who serve on two or more other boards), and the (negative) CEO power. As in the case of *GIndexI*, I add these variables to obtain the index and classify the firms that have above-median index as “Good CG” firms and those with below-median index as “Poor CG” firms.

I run the regression equations (1) and (2) on both the poor CG and good CG sub-samples using *GIndexI* and *GIndexII* separately. Hypothesis  $H_{2a}$  will be satisfied if the coefficient  $\beta_4$  in specialist choice model (equation 1) is significantly positive for the good CG sub-sample but not for the poor CG sub-sample and Hypothesis  $H_{2b}$  will be satisfied if the coefficient  $\beta_{11}$  in the audit fee model (equation 2) is significantly negative for the poor CG sub-sample but not for the good CG sub-sample.

Besides the analyses on the sub-samples, I also use the following model to test  $H_{2b}$ . I use the dummy *DGIndex* to capture the effect of internal governance on audit fees, and use the interaction term *OWN\*DGIndex* to test the joint effect of good internal governance and family ownership on the audit fees.

$$\begin{aligned}
 LNFEET = & \beta_0 + \beta_1BIG + \beta_2LNMVE + \beta_3MA + \beta_4FINANCING + \beta_5MB + \beta_6LEVE \\
 & + \beta_7ROA + \beta_8INVREC + \beta_9LOSS + \beta_{10}SPECIA + \beta_{11}OWN \\
 & + \beta_{12}DGIndex + \beta_{13}OWN*DGIndex \\
 & + Industry\ effects + Year\ effects + \varepsilon
 \end{aligned} \tag{3}$$

In the above model,  $OWN = \textit{Family or FamilyPlus}$  and  $DGIndex = \textit{DGIndexI or DGIndexII}$ . If the coefficient  $\beta_{13}$  is positive and significant in the corresponding regressions, it validates Hypothesis  $H_{2b}$ .

For testing  $H_{2c}$ , I include an indicator variable *SPECIALIST* in the regression (2) to capture the effect of specialist auditor on audit fees. I use the following model:

$$\begin{aligned} LN\textit{FEE} = & \beta_0 + \beta_1\textit{BIG} + \beta_2\textit{LNMVE} + \beta_3\textit{MA} + \beta_4\textit{FINANCING} + \beta_5\textit{MB} + \beta_6\textit{LEVE} \\ & + \beta_7\textit{ROA} + \beta_8\textit{INVREC} + \beta_9\textit{LOSS} + \beta_{10}\textit{SPECIAL} + \beta_{11}\textit{OWN} \\ & + \beta_{12}\textit{SPECIALIST} + \textit{Industry effects} + \textit{Year effects} + \varepsilon \end{aligned} \quad (4)$$

In the above model, *SPECIALIST* is the experimental variable, which is coded 1 if auditor is the city leader in the SIC 2-digit industry by clients' sales.

I run regression model (4) on both the poor CG and good CG sub-samples using *GIndexI* and *GIndexII* separately. Hypothesis  $H_{2c}$  will be satisfied if the coefficient  $\beta_{12}$  is significantly greater for the poor CG sub-sample than for the good CG sub-sample.

#### 4.2 Data sources and sample selection

The Sarbanes-Oxley Act of 2002 affected the corporate governance processes in firms, the work of auditors with respect to the internal control systems, the sensitivity of auditors to weaknesses in internal controls, and accrual estimates by managers and the overall litigation atmosphere (Ascioglu et al. 2005; Asthana et al. 2004; Bartov and Cohen 2006; Chambers and Payne 2008; Ciesielski and Weirich 2006; Griffin et al. 2008; Harrington 2003; Kinney et al. 2004). In view of this, my analysis is carried out in the post-Sarbanes Oxley period spanning the years from 2003 through 2008. Data on family ownership, founder, insider holdings and CEO holdings as well as

board information regarding the directors are obtained from the Corporate Library's Board Analyst database. The Board Analyst provides data on family ownership only from 2004 to 2008. I assume that if a firm is family-controlled in 2004, it is also family controlled in 2003<sup>9</sup>. Board Analyst offers coverage for public companies of the S&P 500, S&P MidCaps 400, S&P SmallCaps 600, Fortune 1000, Russell 3000 and S&P/TSX 60. By giving coverage to midcaps and small caps, the database has reduced the large company bias<sup>10</sup>. For the period from 2003-2008, we get an initial sample of 15,479 firm-year observations. After subtracting the firm-years for which the ownership data (family, CEO, insider or founder) are missing (979 cases), we are left with 14,500 firm-year observations.

Data on audit fees are obtained from the AuditAnalytics database. In the sample of 14,500 observations obtained from Corporate Library, 258 are missing from AuditAnalytics which leaves us with a sample of 14,242. Subtracting the missing observations on board meetings and financial experts on the audit committee (273 cases), we have 13,969 observations left. Data on market value, net income, leverage etc. are obtained from the financial statements on S&P's Compustat database. Matching with Compustat further reduces the sample by 697 observations. Of the remaining 13,272 observations, 134 have missing information on mergers/acquisitions (Compustat data item SALE\_FN) or special items (Compustat data item SPI). Further, we eliminate all the data on financial firms (SIC codes 6000-6999), which further reduces the sample by 2,772. This leaves us with a net usable sample of 10,366 firm-years. The sample selection is summarized in Panel A of Table 2.

Insert Table 2 here

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<sup>9</sup> Analysis of the period from 2004 to 2008 also gives results that are not qualitatively different from the ones presented here.

<sup>10</sup> Larger firms are more likely to disclose information on their corporate governance and other practices and therefore, it is impossible to completely avoid the large firm bias, irrespective of which database is used for analysis.

### 4.3 Descriptive details of the sample

Panel B of Table 2 gives the distribution of sample firms over the six years spanning the period 2003-2008 across the thirteen different industry categories used by Ashbaugh et al. (2003) and Frankel et al. (2002) based on SIC codes. The distribution that is not very different from the distribution of the Compustat database. Panel C gives the descriptive statistics of the variables. Audit fee has a mean and median that are very significantly higher than the ones reported in Ashbaugh et al. (2003), which is suggestive of the increase in audit fees after the Sarbanes-Oxley Act. Consistent with prior studies, more than 90% of the firms are audited by the big-4 auditors. On average, CEO holdings constitute 2.7% of outstanding shares and 7.2% of the firms are classified as family firms. A founder director serves on the boards of 21.3% of the firms. On average, the board meets 8 times a year. The average board size is 8.7 and the average size of the audit committee is 3.7. 94% of the audit committee members are unaffiliated outsiders. Of the audit committee members, 36% have financial expertise.

Table 3 gives the Pearson (Spearman) correlations. The two governance indices exhibit a 67% (68%) correlation. As expected, the audit fee is correlated with firm size [61% (60%)]. A strong negative correlation [-43% (-42%)] is found between firm size and loss propensity. Although *Family* is negatively correlated with *LNFEES*, the correlation is only -.04 (-.03). In general, the correlations between independent variables are small and are unlikely to result in multicollinearity.

Insert Table 3 here

## Chapter 5. Hypothesis Tests and Result Analyses

### 5.1 Univariate tests for audit fees

Table 4 presents univariate tests of audit fee differences between (i) family firms and non-family firms; (ii) firms with below-median CEO holdings and those with above-median CEO holdings; (iii) firms with and without founder directors; and (iv) firms with low and high insider director holdings. The audit fee is significantly lower for family firms compared to non-family firms, for firms with high CEO holdings compared to firms with low CEO holdings, firms with founder directors compared to those that don't, and for firms that have high insider holdings compared to those with low insider holdings. These results suggest that auditors respond to the reduction of the Type 1 agency problem by reducing their audit effort and, in general, this is not offset by an increase of the Type 2 agency problem, thus validating  $H_{1b}$ .

Insert Table 4 here

### 5.2 Testing Hypotheses $H_{1a}$ and $H_{1b}$

Table 5 gives the results of regression (1). The first column gives the results when  $OWN = Family$ . The second column gives the results when  $OWN = FamilyPlus$ . The coefficient  $\beta_4$  is positive and significant in both the columns, which validates Hypothesis  $H_{1a}$ , showing that family firms are more likely to choose specialist auditors, consistent with the argument that family owners are more likely to signal the non-expropriation motivation to the market than nonfamily firms.

Insert Table 5 here

Table 6 gives the results of regression equation (2). The first column gives the results when  $OWN = Family$ . The second column gives the results when  $OWN = FamilyPlus$ . The coefficient  $\beta_{11}$  is negative and significant in both the columns,



which validates Hypothesis H<sub>1b</sub>, consistent with the argument that the reduction of Type 1 agency cost reduces the audit fee and the increase in Type 2 agency cost is not sufficient to make the coefficient insignificant. This result suggests that, in general, the effects of the Type 1 agency conflict dominate the effects of Type 2 agency conflict in the determination of auditor effort and fees.

Insert Table 6 here

Consistent with prior studies and my expectation, the audit fee is higher for the big-4 auditors, positively associated with client firm size, leverage, inventory and receivables, loss and special items. Contrary to my expectations but consistent with Ashbaugh et al. (2003), financing and market-to-book variables are negatively associated with audit fees. The coefficients in the two regressions are not very different from each other, which suggests that the two *OWN* variables do not affect the relation between the other control variables and audit fees. The adjusted R-squares of 0.637 and 0.636 in the two regressions, respectively, are comparable to the adjusted R-square of 0.66 in Ashbaugh et al. (2003). This comparability of the R-squares metric shows that the audit fee model seems to be as valid in the post-Sarbanes-Oxley period as it was before the Act.

### 5.3 Testing Hypotheses H<sub>2a</sub> and H<sub>2b</sub>

Tables 7 and 8 provide the results of regression equation (1) on sub-samples of firms with poor and good internal governance. For the sake of easy readability, the columns of Table 5 using the full sample are repeated in the first column of Table 7 and the first column of Table 8. Columns 2 and 3 give the results of the regression for the two governance-differentiated sub-samples when governance is based on *GIndexI*. Likewise, Columns 4 and 5 give the results of the regression for the two governance-differentiated sub-samples when governance is based on *GIndexII*. In both cases, *Family* and *FamilyPlus* are significantly positively related to specialist

auditor choice only when the internal governance is good but loses significance when the internal governance is poor. This is consistent with the hypothesis that when family-owners value their private benefits highly, they adopt weak internal governance and in this case, they have no incentive to signal the market through choosing a specialist auditor.

Insert Tables 7 and 8 here

Tables 9 and 10 provide the results of regression equation (2) on the subsamples of firms with poor and good internal governance. *Family* and *FamilyPlus* are significantly negatively related to audit fee only when the internal governance is poor but loses significance when the internal governance is strong. This is consistent with the hypothesis that when family-owners value their private benefits highly, they adopt weak internal governance and in this case they do not incentivize the auditors to mitigate the Type 2 agency problem. As a result, there is a significant negative relation between audit fees and family ownership. On the other hand, when the family-owners want to signal that they will not expropriate, they adopt strong internal governance and incentivize the auditors to mitigate the agency concerns of non-family investors and therefore the reduction in audit effort driven by the reduction of the Type 1 agency problem is compensated by an increase in audit effort to reduce the Type 2 agency problem. In effect, when the internal governance is strong, the audit fee is not reduced by family ownership. This effect is also shown in Figure 1. Figure 1 provides a picture of expected audit fees with and without family ownership in the cases of strong and weak internal governance. This figure shows that the audit fee is expected to be higher in cases where the internal governance is strong, both for the family and non-family firms. Furthermore, for firms with poor governance, the audit fee in a family firm is obviously smaller than that in a nonfamily firm, whereas there is no obvious difference in audit fee between a family firm and a nonfamily firm when the corporate governance is strong.

Insert Tables 9 and 10 and Figure 1 here

An examination of the coefficients of the sub-sample regressions shows that there are only minor differences between the two sub-samples. This indicates that the audit fee model does not exhibit significant structural differences between good-governance and weak-governance firms.

Table 11 presents the results of regression equation (3) on the joint effect of family control and good corporate governance on audit fees. The first column gives the regression result of the interaction term  $OWN*DGIndex$  for  $OWN=Family$  and  $DGIndex=DGIndexI$ , which shows that the interaction term is significantly positively associated with audit fees, consistent with my argument that family firms with good corporate governance are more likely to signal their non-expropriation behavior by purchasing more audit effort. Analogously, for  $OWN=Family$  and  $DGIndex=DGIndexII$ , the interaction term is also significantly positively correlated with audit fees, thereby supporting my hypothesis  $H_{2b}$ . The last two columns give the results for  $OWN=FamilyPlus$ . The result shown in third column indicates that there is a positively but insignificantly joint effect of family ownership and good corporate governance on audit fees, only offering weak evidence to support my hypothesis  $H_{2b}$ . However, the last column reporting the result for  $OWN=FamilyPlus$  and  $DGIndex=DGIndexII$  shows a significantly positive association between the interaction term  $OWN*DGIndex$  and  $LNFEED$ , which also supports my hypothesis  $H_{2b}$ . In total, table 11 gives me strong evidence to validate the hypothesis  $H_{2b}$ .

Insert Table 11 here

#### 5.4 Testing Hypothesis $H_{2c}$

Table 12 provides the results of regression equation (4) on the specialist auditor premium. The first column gives the regression results of the full sample, which shows that the dummy variable  $SPECIALIST$  is significantly positively associated with audit fees, consistent with my expectation on the existence of a specialist

auditor premium. Columns 2 and 3 give the results of the regression for the two governance-differentiated sub-samples when governance is based on *GIndexI*. Likewise, Columns 4 and 5 give the results of the regression for the two governance-differentiated sub-samples when governance is based on *GIndexII*. In both cases, *SPECIALIST* is significantly positively correlated to audit fees only when the internal governance is poor but loses significance when the internal governance is good. The t-value for the difference between the estimated coefficients of *SPECIALIST* in Columns 2 and 3 shows that firms with poor internal governance pay significantly more premiums to a specialist auditor than those with good internal governance. Likewise, the t-value for the difference between the estimated coefficients of *SPECIALIST* in Columns 4 and 5 also supports the hypothesis that the specialist auditor premium is smaller in the presence of stronger boards compared to firms with weaker boards.

The Big auditors are more likely to be specialist auditors than non-Big auditors. I therefore calculate a correlation coefficient (0.226) between *SPECIALIST* and *BIG*, and VIFs in the first regression of Table 12. I find that the correlation is significant but not strong enough to cause multicollinearity problems, because the VIF of *SPECIALIST* (*BIG*) in the first column of Table 12 is 1.07(1.16).

Insert Table 12 here

### *5.5 Additional tests using other measures of concentrated holdings*

I repeat regression equation (2) using CEO Holdings, insider holdings, and the existence of founder director as alternative measures to family ownership. CEO ownership aligns the incentives of management with that of the investors and thereby reduces the Type 1 agency problem. However, when the CEO is from the family, CEO ownership is also connected with the Type 2 agency conflict. Insider directors constitute the top management of the firm and having high ownership aligns their interest with those of investors. However, it might also exacerbate the agency

problem between insider shareholders and outside shareholders. Existence of a founder or his/her heir on the board also could be interpreted as an alignment of the management and investor interest. Similar to family ownership, the founder director presence might indicate entrenchment and a compromise of the outside shareholders' interests.

Table 13 shows the results of regression equation (2) using CEO holdings, insider holdings, and the existence of a founder director as alternative measures to family ownership. In the interest of brevity, only the coefficients of the treatment variables are shown. In the full sample regression, CEO holdings, insider ownership and Founder director presence show a significant negative association with audit fee. In the sub-sample regressions, the significant negative association remains for firms with poor governance but the association becomes insignificant for firms with strong governance. In effect, these variables exhibit the same consequences as family ownership.

Insert Table 13 here

#### *5.6 Additional tests where sub-samples are formed based on components of the internal governance index*

Analyses carried out above using the two indices support the general finding that in family firms that signal their intent with strong governance, audit fee is not different between family and non-family firms. This result could be driven by one or a few or all of the governance characteristics. In this additional test, I use some of the individual components of the governance indices to examine whether they drive the results.

Table 14 presents the results of sub-sample analyses where sub-samples of strong and weak governance are constructed based on (i) percentage of outside independent directors; (ii) independence index; (iii) meetings index; (iv) size index; and (v) CEO power. The percentage of independent directors has been used in

several prior studies as the sole indicator of board-based governance (Adams and Ferreira 2007; Andersen et al. 2004; Carcello et al. 2002; Cotter and Sylvester 2003; Osma 2008). Therefore, I use these as separate variables. Variables (ii) to (iv) are sub-indices from which *GIndexII* is constructed and relate to highly researched indicators of governance such as independence, diligence, and board/audit committee size. Variable (v) – CEO power – has also been an important indicator of the independence of the board from the CEO (Tsui et al. 2001). Consistently in all cases, *Family* is negatively associated with audit fee only when the corresponding governance variable is poor but the association becomes insignificant when the corresponding governance variable is strong. This analysis shows that all governance variables have a similar effect and my results are robust.

Insert Table 14 here

#### *5.7 Additional tests for the effect of firm size on the relationship between family ownership and audit fees.*

Larger family firms come under greater public scrutiny and consequently the potential for benefitting from private control benefits is less. Moreover, in larger family firms, the external shareholders are more numerous and therefore have a greater incentive for class action lawsuits compared to the external shareholders in small family firms. Therefore, the litigation risk faced by auditors is relatively higher than in small family firms. The big family firms purchase more audit to satisfy the stronger external concerns, whereas the small family firms have no similar motivation because of weaker external concerns. Thus, I hypothesize that the negative relationship between audit fee and family ownership is weaker in large firms than in small firms.

To validate the above hypothesis, I use extreme size observations (bottom 25% and top 25%) and a matched-pair, nonfamily firm. Here, I rank the family firms by size and isolate those in the lowest and highest quartiles (n=187 for the lowest and

n=187 for the highest). Then, I match each of these firms with a non-family firm in the same industry and that is nearest in size. Thus, I end up with a sample of 374 small size firms (187 family obs. and 187 nonfamily obs.) and 374 large size firms. I also combine the two samples (n=748).

The regression results are reported in table 15. As expected, the significant, negative association between family ownership and audit fee still appears in the combined sample. However, the lowest and highest quartile regression results show that the negative relationship only is significant for firms in the lowest quartile but not for firms in the highest quartile. Thus, large family firms, which face a lot of media attention, do not have lower audit fees.

Insert Table 15 here

### *5.9 Additional tests for small firms*

Unlike large family firms, small family firms are not subject to great scrutiny from the market. The reason why large family firms set up strong boards, choose specialist auditors, and purchase more audit effort is likely to be the result of external scrutiny. However, when small family firms choose strong boards, specialist auditors, and higher audit fees, this is more likely to be result of voluntarily signaling their non-expropriation behavior. Based on this reasoning, I rerun regression equations (1) – (3) and find that in small firms the positive effect of family ownership on specialist auditor choice shown in table 16 is stronger than that shown in table 7, and the joint positive effect of family ownership and good corporate governance on audit fees reported in table 17 is stronger than that presented in table 11.

Comparing table 7 with table 16, I find that the estimated coefficients on *OWN* in table 16 are greater than their counterparts in table 7. To verify this observation, I calculate the t-value for the difference in coefficients. For example, in the full sample regression, the t-value for the coefficients difference for *OWN* shows a significant difference between the estimated coefficients. Likewise, the comparison between

table 11 and table 17 shows that the estimated coefficients of the interaction term *OWN\*DGIndex* in table 17 are greater than their counterparts in table 11. T statistical tests show that such differences are significant. In total, these evidences validate my expectation that small family firms are more likely to signal their non-expropriation behavior compared to large family firms.

Insert Tables 16 and 17 here

#### *5.10 Additional test when managerial ownership is very high and entrenchment is indicated*

Several studies have documented non-linear effects of managerial ownership on governance (Yeo et al. 2002; Morck et al. 1988). These studies suggest that at very high levels of managerial ownership, the entrenchment effect dominates the alignment effect. Therefore, if the managerial ownership is very high, we do not expect family ownership to reduce the Type 1 agency cost and the audit fee is not expected to be lower in family firms. In order to test this, we select the top quartile of the CEO ownership sub-sample and run regression equation (2) on this sample. The results are shown in Table 18. As expected, the negative association between family ownership and audit fee disappears in this case. The entrenched CEO dominates other governance effects.

Insert Table 18 here

#### *5.11 Additional test on the benefit of using corporate governance (auditing) as a signal mechanism for family firms.*

As an additional test, I test the effect of corporate governance on a firm's credit rating. I use the model in Francis et al. (2008), and report the results in Table 19. As expected, family firms get a higher credit rating in the full sample analysis. The separate sample analyses show that such effect is driven by the family firms with



good CG. These results indicate that family firms can benefit from setting up good corporate governance which necessarily leads to higher quality audit.

Insert Table 19 here

## Chapter 6. Conclusion

In this thesis, I examine the effect of family ownership on auditor choice and audit pricing. Family ownership of firms results in a reduction of the agency conflict between managers and investors because of the superior knowledge of the family owners about the business that allows them to monitor the managers more effectively. Given the concerns of nonfamily investors on the expropriation of family owners, the family firms are more likely to signal their non-expropriation incentive by choosing a specialist auditor. Furthermore, given that the primary role of auditors is to reduce the information asymmetry between managers and investors, this alignment effect reduces audit risk from mis-reporting by managers and, in a competitive audit market, is expected to lead to lower audit fees for family firms. On the other hand, the family owners could have incentives for consuming private benefits and this creates an agency conflict with non-family shareholders. Although it is not the primary role of auditors to mitigate agency conflicts between different classes of investors, prior evidence suggests that in contexts where they have the incentive, auditors have the capability to mitigate the agency conflict between inside and outside investors.

These arguments inevitably lead to three questions that I answer in this thesis. The first is whether family firms are more likely to choose a specialist auditor to signal their non-expropriating behavior compared to nonfamily firms, which do not confront the Type 2 agency conflict as family firms do. The second is whether the Type 1 agency conflict dominates the Type 2 agency conflict in the determination of audit effort and audit fees. The third is that in contexts where the family owners genuinely are not consuming private benefits and expropriating the wealth of non-family shareholders, do they provide incentives to the auditors to address the concerns of non-family shareholders? I address these questions in this paper. I find that, in general, family firms are more likely to choose a specialist auditor to signal their non-expropriation behavior than nonfamily firms, and that the Type 1 agency conflict dominates the Type 2 agency conflict in the determination of audit effort and

pricing. In order to address the third question, I surmise that family owners who do not expropriate wealth from non-family owners will use strong independent and competent internal governance mechanisms to signal their honesty. Therefore, in the presence of strong internal governance, the owners are more likely to choose specialist auditors and provide incentives to auditors to mitigate the concerns of non-family owners and therefore, the potential reduction in audit effort because the reduced Type 1 agency conflict is compensated by an increase in the audit effort needed to mitigate the concerns of the non-family owners. I find that the positive relation between family ownership and specialist auditor choice is stronger in the presence of strong internal governance but is insignificant if the internal governance is weak, and the negative relation between family ownership and audit fee disappears in the presence of strong internal governance but is significant if the internal governance is weak.

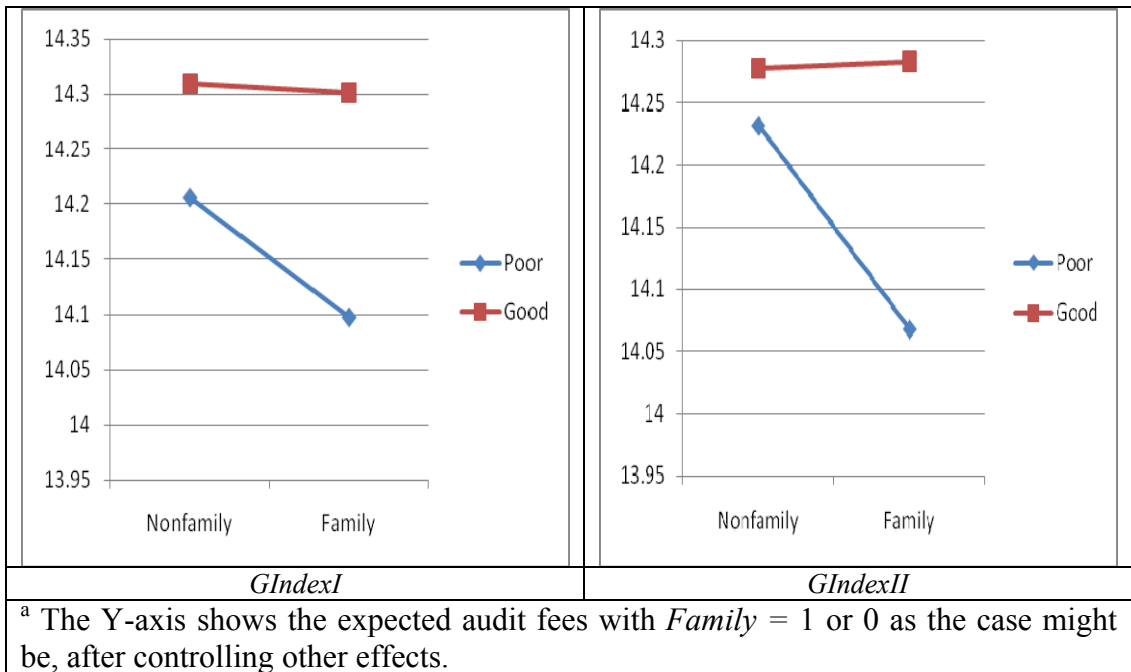
I find that the results are robust to using alternate measures of ownership such as CEO ownership, insider ownership, and the presence of founder directors. I also find that the result is driven by individual internal governance factors such as board/audit committee independence, board diligence, board/audit committee size, and CEO power. I also document that among family firms, the audit fee is relatively higher in larger firms and therefore these firms do not show significantly lower audit fees compared to nonfamily firms. Furthermore, if the entrenchment effect of managerial ownership is very strong, the effect of family ownership on audit fee disappears.

My thesis investigates auditor choice and auditor responses to agency conflicts in family firms that have effective (ineffective) internal governance. The findings in this thesis are valuable to regulators who might want to improve information flow to nonfamily shareholders, nonfamily shareholders in assessing the motives of family shareholders, auditing and accounting standard setters in redefining the role of auditors, and family shareholders who want to signal non-expropriation of nonfamily shareholder wealth.

There are several directions for future research. First of all, there is the question why Big 4 is not used as a quality signaling vehicle rather than a specialist auditor in family firms. A potential explanation is based on the fact that 91% of US firms in my sample choose Big 4 auditors, but only 62% of US firms use specialist auditors. This fact shows that using Big 4 as a signal is less likely to achieve a separating equilibrium than using specialist auditors. I thus think that specialist auditors are likely to be a more effective signal than Big 4. However, my conjecture is still very fragile and further research is needed to investigate this question.

My thesis is based on the US market. The applicability of the story in my thesis to other markets is not known with any degree of certainty. Thus to test the applicability of my story in other markets, especially eastern markets such as Hong Kong and China, is a very interesting topic because the differences in institutional environments and cultures between US and eastern markets is huge. These differences might mitigate the applicability of the story. This calls out for more research.

**Figure 1**  
**Audit fees and family ownership under poor and good governance**



**Table 1**  
**Definitions of Variables**

Dependent variables:	
<i>LNFEET</i>	= natural log of audit fees;
<i>SPECIALIST</i>	= 1 if auditor is the city leader in the SIC 2-digit industry by clients' sales, otherwise 0;
Control Variables:	
<i>BIG</i>	= 1 if the auditor is PWC, EY, DTT, or KPMG, and 0 otherwise;
<i>LNMVET</i>	= natural log of market value (Compustat data item CSHO times Compustat data item PRCC_F);
<i>MA</i>	= 1 if the firm is engaged in a merger or acquisition (as reported in SALE_FN of Compustat), and 0 otherwise;
<i>FINANCING</i>	= 1 if <i>MA</i> is not equal to 1 and any of the following conditions apply: long term debt increased by 20 percent or more, number of shares outstanding increased by 10 percent or more after controlling for stock splits, and 0 otherwise;
<i>MB</i>	= market value (Compustat data item CSHO times Compustat data item PRCC_F) divided by stockholders' equity of common shareholders (Compustat data item SEQ);
<i>LEVE</i>	= total assets less stockholders' equity of common shareholders divided by total assets (Compustat data item AT);
<i>ROA</i>	= net income before extraordinary items (Compustat data item IB) divided by total assets;
<i>INVREC</i>	= sum of a firm's receivables (Compustat data item RECT) and inventory (Compustat data item INVT) divided by total assets;
<i>LOSS</i>	= 1 if the firm's ROA is negative, and 0 otherwise;
<i>SPECIAL</i>	= 1 if the firm reports special items (Compustat data item SPI), and 0 otherwise;
Experimental Variables:	
<i>Family</i>	= 1 if the firm where family ties, most often going back a generation or two to the founder, play a key role in both ownership ( $\geq 20\%$ ) and board membership, and 0 otherwise;
<i>FamilyPlus</i>	= 1 if <i>Family</i> is valued one or the firm has at least one founder who sits in the board as well as there is dual class stock that creates a wedge between cash flow rights & control rights in the firm, otherwise 0.
<i>CEO Holdings</i>	= fraction of outstanding shares held by the CEO;
<i>Insiders Holdings</i>	= fraction of outstanding shares held by insider directors;
<i>Founder</i>	= 1 if one or more directors are the firms' founders;
Corporate Governance Variables:	
<i>%Outsiders</i>	= fraction of outside directors who serve on the board;
<i>%affiliated</i>	= fraction of affiliated directors who serve on the board;
<i>%Female</i>	= fraction of female outside directors to all outside directors;
<i>CEO Power</i>	= 1 if the CEO is the Chairman, founder, or sole insider, and 0 otherwise;
<i>Tenure</i>	= average number of years directors serve;
<i>%Old</i>	= fraction of directors who are older than 70;
<i>#Board Meetings</i>	= number of board meetings in a year;
<i>% Attended</i>	= fraction of directors who meet attendance standards (75% attendance);
<i>Board Size</i>	= number of directors serving on the board;
<i>AC Size</i>	= number of directors serving on the audit committee;
<i>%Busy Affiliated or Outsider</i>	= fraction of affiliated or outside directors who serve on four or more other boards;
<i>%Busy Insiders</i>	= fraction of inside directors who serve on two or more other boards;
<i>Directorships</i>	= average number of other boards on which outside directors serve;
<i>%Outsiders AC</i>	= fraction of outside directors who serve on the audit committee;
<i>%Financial Experts</i>	= fraction of accounting or financial experts who serve on the audit committee;
<i>Independence Index</i>	= %Outsiders - %affiliated + %Female
<i>Power Index</i>	= CEO Power
<i>Old Index</i>	= Tenure + %Old
<i>Meetings Index</i>	= #Board Meetings + % Attended
<i>Size Index</i>	= Board Size + AC Size
<i>Busy Index</i>	= %Busy Affiliated or Outsiders + %Busy Insiders
<i>GIndexI</i>	= %Outsiders + #Board Meetings – CEO Power + %Outsiders AC + %Financial Experts + Directorships;
<i>GIndexII</i>	= Independence Index + Meetings Index – Power index + Old Index + Size Index + Busy Index;
<i>DGIndexI</i>	= 1 if <i>GIndexI</i> is above its median value, otherwise zero;
<i>DGIndexII</i>	= 1 if <i>GIndexII</i> is above its median value, otherwise zero;

**Table 2**  
**Sample Details**

**Panel A: Sample Selection**

	2003-2008
Initial sample : firm-year observations in Companies of Corporate Library	15479
Less	
Observations with missing CEO/insiders/family/founder holdings in Corporate Library	-979
	14500
Observations not included in AuditAnalytics	-258
	14242
Observations missing number of board meetings/financial experts of audit committee in Corporate Library to compile governance indexes	-273
	13969
Observations not included in Computstat	-697
	13272
Observations missing footnote of sale (Computstat data item SALE_FN)/special item (Computstat data item SPI) /net income (Computstat data item IB)	-134
	13138
Observations in financial industries (6000-6999)	-2772
Final firm-year observations	10366

**Panel B: Distribution of the sample firms over the sample period and across industries**

	2003	2004	2005	2006	2007	2008	Total
Agriculture (0100-0999)	3	4	5	6	4	3	25
Mining and Construction (1000-1999, excluding 1300-1399)	20	32	32	50	50	60	244
Food (2000-2111)	20	40	46	56	59	53	274
Textiles and printing/publishing (2200-2799)	75	102	102	119	117	108	623
Chemicals (2800-2824, 2840-2899)	34	46	52	66	70	64	332
Pharmaceuticals (2830-2836)	46	61	67	150	164	166	654
Extractive (1300-1399, 2900-2999)	43	54	58	93	113	121	482
Durable manufactures (3000-3999, excluding 3570-3579 and 3670-3679)	232	353	354	503	507	494	2443
Transportation (4000-4899)	73	95	98	149	161	168	744
Utilities (4900-4999)	72	88	90	103	98	101	552
Retail (5000-5999)	123	199	189	256	261	254	1282
Services (7000-8999, excluding 7370-7379)	88	141	147	237	234	224	1071
Computers (3570-3579, 3670-3679, 7370-7379)	129	216	228	336	342	347	1598
Others	6	7	9	8	6	6	42
Total	964	1438	1477	2132	2186	2169	10366

<sup>a</sup>SIC codes are given in parentheses.

**Panel C: Descriptive**

<b>Statistics</b> Variable	Mean	Std. Dev.	Q1	Median	Q3
<i>FEE(\$)</i>	290669 9	499559 7	766000	145875 5	298600 0
<i>MVE(M\$)</i>	5328.2 04	13448. 61	422.53 62	1173.8 91	3629.5 89
<i>LNFEES</i>	14.254	1.074	13.549	14.193	14.909
<i>SPECIALIST</i>	0.623	0.484	0.000	1.000	1.000
<i>LN MVE</i>	7.145	1.686	6.046	7.068	8.197
<i>BIG</i>	0.912	0.283	1.000	1.000	1.000
<i>MA</i>	0.222	0.416	0.000	0.000	0.000
<i>FINANCING</i>	0.304	0.460	0.000	0.000	1.000
<i>MB</i>	2.734	1.983	1.379	2.140	3.493
<i>LEVE</i>	0.523	0.222	0.354	0.522	0.679
<i>ROA</i>	0.007	0.168	0.004	0.044	0.083
<i>INVREC</i>	0.236	0.155	0.103	0.214	0.339
<i>LOSS</i>	0.239	0.426	0.000	0.000	0.000
<i>SPECIAL</i>	0.730	0.444	0.000	1.000	1.000
<i>CEO Holdings</i>	0.027	0.079	0.001	0.003	0.012
<i>Family</i>	0.072	0.259	0.000	0.000	0.000
<i>Insiders Holdings</i>	0.044	0.102	0.002	0.007	0.028
<i>Founder</i>	0.213	0.410	0.000	0.000	0.000
<i>GIndexI</i>	-0.009	0.627	-0.469	-0.046	0.422
<i>GIndexII</i>	-0.007	0.510	-0.393	-0.096	0.383
<i>%Outsiders</i>	0.705	0.150	0.600	0.714	0.833



<i>%affiliated</i>	0.113	0.129	0.000	0.100	0.182
<i>%Female</i>	0.138	0.149	0.000	0.125	0.222
<i>CEO Power</i>	0.667	0.471	0.000	1.000	1.000
<i>Tenure</i>	8.629	3.931	5.818	8.129	10.857
<i>%Old</i>	0.189	0.195	0.000	0.143	0.286
<i>#Board Meetings</i>	7.922	3.590	5.000	7.000	9.000
<i>% Attended</i>	0.987	0.043	1.000	1.000	1.000
<i>Board Size</i>	8.754	2.202	7.000	9.000	10.000
<i>AC Size</i>	3.728	1.034	3.000	3.000	4.000
<i>%Busy affiliated or outsiders</i>	0.149	0.174	0.000	0.111	0.250
<i>%Busy Insiders</i>	0.068	0.086	0.000	0.000	0.125
<i>Directorships</i>	2.033	0.922	1.333	1.833	2.600
<i>%Outsiders AC</i>	0.938	0.135	1.000	1.000	1.000
<i>%Financial Experts</i>	0.360	0.294	0.200	0.333	0.500

**Table 3**  
**Correlation matrix**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
<i>LNFEED(1)</i>		-0.26	-0.03	-0.27	-0.16	0.14	0.16	0.26	0.60	0.11	-0.23	0.02	0.35	0.06	0.08	-0.14	0.26
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
<i>CEO Holdings(2)</i>	-0.16		0.11	0.77	0.15	-0.33	-0.30	-0.13	-0.29	-0.02	0.08	-0.04	-0.10	-0.02	0.07	0.03	-0.10
	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.06	0.00	0.01	0.00
<i>Family(3)</i>	-0.04	0.21		0.18	0.00	-0.06	0.04	-0.05	-0.05	-0.02	-0.01	-0.05	-0.02	0.01	0.03	-0.02	-0.02
	0.00	0.00		0.00	0.99	0.00	0.00	0.00	0.00	0.02	0.46	0.00	0.08	0.23	0.00	0.08	0.04
<i>Insiders Holdings(4)</i>	-0.17	0.84	0.27		0.25	-0.17	-0.11	-0.18	-0.33	-0.03	0.10	-0.07	-0.13	-0.04	0.08	0.07	-0.10
	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Founder(5)</i>	-0.15	0.13	0.00	0.17		-0.08	-0.08	-0.08	-0.10	0.01	0.10	0.05	-0.19	-0.02	-0.09	0.08	-0.05
	0.00	0.00	0.99	0.00		0.00	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.02	0.00	0.00	0.00
<i>GIndexI(6)</i>	0.15	-0.23	-0.06	-0.15	-0.08		0.68	0.06	0.08	0.00	-0.03	0.01	0.08	-0.04	0.01	0.04	0.09
	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.69	0.01	0.60	0.00	0.00	0.48	0.00	0.00
<i>GIndexII(7)</i>	0.15	-0.19	0.05	-0.08	-0.06	0.67		0.07	0.18	-0.02	-0.05	0.02	0.04	0.06	0.05	-0.06	0.05
	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.03	0.00	0.05	0.00	0.00	0.00	0.00	0.00
<i>BIG(8)</i>	0.27	-0.14	-0.05	-0.17	-0.08	0.06	0.06		0.30	0.04	-0.10	0.07	0.12	0.08	-0.03	-0.12	0.07
	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
<i>LN MVE(9)</i>	0.61	-0.13	-0.05	-0.15	-0.09	0.08	0.16	0.30		0.09	-0.17	0.42	0.13	0.43	-0.11	-0.42	0.05
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>MA(10)</i>	0.10	-0.03	-0.02	-0.04	0.01	0.01	-0.02	0.04	0.09		-0.35	0.01	-0.01	0.01	0.01	-0.06	0.06
	0.00	0.00	0.02	0.00	0.37	0.59	0.04	0.00	0.00		0.00	0.16	0.47	0.41	0.40	0.00	0.00
<i>FINANCING(11)</i>	-0.22	0.06	-0.01	0.07	0.10	-0.03	-0.05	-0.10	-0.16	-0.35		0.06	-0.21	0.00	-0.05	0.09	-0.10
	0.00	0.00	0.46	0.00	0.00	0.01	0.00	0.00	0.00	0.00		0.00	0.00	0.64	0.00	0.00	0.00
<i>MB(12)</i>	0.01	0.00	-0.05	0.00	0.05	0.01	0.01	0.05	0.35	-0.02	0.08		-0.05	0.45	-0.02	-0.26	-0.12
	0.36	0.97	0.00	0.63	0.00	0.13	0.33	0.00	0.00	0.09	0.00		0.00	0.00	0.04	0.00	0.00
<i>LEVE(13)</i>	0.34	-0.07	-0.01	-0.09	-0.19	0.08	0.02	0.12	0.08	-0.01	-0.21	0.04		-0.26	-0.03	0.12	0.18

	0.00	0.00	0.17	0.00	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.00		0.00	0.00	0.00	0.00
<i>ROA(14)</i>	0.17	0.01	0.02	0.01	-0.07	-0.03	0.04	0.12	0.44	0.05	-0.09	0.17	-0.17		0.17	-0.74	-0.19
	0.00	0.38	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
<i>INVREC(15)</i>	0.04	0.02	0.03	0.04	-0.08	0.00	0.04	-0.03	-0.13	-0.01	-0.04	-0.05	-0.02	0.13		-0.12	-0.01
	0.00	0.08	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.46	0.00	0.00	0.13	0.00		0.00	0.61
<i>LOSS(16)</i>	-0.13	0.01	-0.02	0.01	0.08	0.04	-0.06	-0.12	-0.43	-0.06	0.09	-0.15	0.14	-0.68	-0.09		0.14
	0.00	0.15	0.08	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
<i>SPECIAL(17)</i>	0.24	-0.09	-0.02	-0.10	-0.05	0.10	0.05	0.07	0.04	0.06	-0.10	-0.09	0.18	-0.10	-0.02	0.14	
	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	

<sup>a</sup> The numbers in parentheses are the two-tailed significance levels;  
<sup>b</sup> Spearman (Pearson) Correlations are Presented in the Upper (Lower) Diagonal.

**Table 4**  
**Difference in audit fees between firms with and without concentrated holdings**

	<i>Obs.</i>	<i>Mean</i>	<i>Difference</i>	<i>T</i>
<i>Family=0</i>	9616	14.265	0.153	(3.773)***
<i>Family=1</i>	750	14.112		
<i>Low CEO Holdings</i>	5183	14.529	0.549	(26.950)***
<i>High CEO Holdings</i>	5183	13.979		
<i>Founder =0</i>	8153	14.339	0.396	(15.573)***
<i>Founder =1</i>	2213	13.943		
<i>Low Insiders Holdings</i>	5183	14.531	0.553	(27.139)***
<i>High Insiders Holdings</i>	5183	13.978		

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Median values of CEO/Insiders holdings are used to partition the subsamples.

**Table 5**  
**Family ownership and specialist auditor choice: *OWN = Family/FamilyPlus***

$$SPECIALIST = \beta_0 + \beta_1 LNMVE + \beta_2 LEVE + \beta_3 ROA + \beta_4 OWN + Industry\ effects + Year\ effects + \varepsilon$$

<i>Variables</i>	<i>OWN=Family</i>	<i>OWN = FamilyPlus</i>
<i>Intercept</i>	-2.271*** (0.120)	-2.229*** (0.119)
<i>LNMVE</i>	0.295*** (0.016)	0.287*** (0.016)
<i>LEVE</i>	1.126*** (0.103)	1.142*** (0.103)
<i>ROA</i>	0.091 (0.148)	0.138 (0.148)
<i>OWN</i>	0.154* (0.083)	0.154** (0.074)
<i>Observations</i>	10366	10366

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed Z significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 6**  
**Family ownership and audit fees: *OWN = Family/FamilyPlus***

$$LNFEF = \beta_0 + \beta_1 BIG + \beta_2 LNMVE + \beta_3 MA + \beta_4 FINANCING + \beta_5 MB + \beta_6 LEVE + \beta_7 ROA + \beta_8 INVREC + \beta_9 LOSS + \beta_{10} SPECIAL + \beta_{11} OWN + \text{Industry effects} + \text{Year effects} + \varepsilon$$

Variable	<i>OWN=Family</i>	<i>OWN = FamilyPlus</i>
<i>Intercept</i>	10.610*** (0.262)	10.606*** (0.263)
<i>BIG</i>	0.236*** (0.041)	0.235*** (0.041)
<i>LN MVE</i>	0.479*** (0.009)	0.480*** (0.009)
<i>MA</i>	0.011 (0.020)	0.012 (0.020)
<i>FINANCING</i>	-0.074*** (0.019)	-0.073*** (0.019)
<i>MB</i>	-0.123*** (0.006)	-0.123*** (0.006)
<i>LEVE</i>	1.341*** (0.062)	1.340*** (0.062)
<i>ROA</i>	-0.115 (0.092)	-0.116 (0.092)
<i>INVREC</i>	0.937*** (0.089)	0.936*** (0.089)
<i>LOSS</i>	0.232*** (0.029)	0.232*** (0.029)
<i>SPECIAL</i>	0.244*** (0.020)	0.245*** (0.020)
<i>OWN</i>	-0.077** (0.039)	-0.064* (0.036)
Observations	10366	10366
R-squared	0.636	0.636

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 7**  
**Family ownership and specialist auditor choice:  $OWN = Family$**

$$SPECIALIST = \beta_0 + \beta_1 LNMVE + \beta_2 LEVE + \beta_3 ROA + \beta_4 OWN + Industry\ effects + Year\ effects + \varepsilon$$

Variables	Full	GIndexI		GIndexII	
		Poor CG	Good CG	Poor CG	Good CG
Intercept	-2.271*** (0.120)	-2.736*** (0.178)	-1.904*** (0.166)	-2.398*** (0.177)	-2.177*** (0.166)
LNMVE	0.295*** (0.016)	0.361*** (0.024)	0.277*** (0.022)	0.294*** (0.024)	0.292*** (0.021)
LEVE	1.126*** (0.103)	1.467*** (0.150)	0.921*** (0.146)	1.285*** (0.143)	0.859*** (0.150)
ROA	0.091 (0.148)	0.010 (0.218)	0.152 (0.207)	0.165 (0.216)	0.039 (0.206)
OWN	0.154* (0.083)	0.026 (0.111)	0.253** (0.127)	0.011 (0.118)	0.295** (0.118)
Observations	10366	5183	5183	5183	5183

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed Z significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 8**  
**Family ownership and specialist auditor choice:  $OWN = FamilyPlus$**

$$SPECIALIST = \beta_0 + \beta_1 LNMVE + \beta_2 LEVE + \beta_3 ROA + \beta_4 OWN + Industry\ effects + Year\ effects + \varepsilon$$

Variables	Full	GIndexI		GIndexII	
		Poor CG	Good CG	Poor CG	Good CG
<i>Intercept</i>	-2.229*** (0.119)	-2.689*** (0.177)	-1.889*** (0.165)	-2.400*** (0.178)	-2.168*** (0.166)
<i>LN MVE</i>	0.287*** (0.016)	0.337*** (0.023)	0.257*** (0.021)	0.294*** (0.024)	0.291*** (0.021)
<i>LEVE</i>	1.142*** (0.103)	1.379*** (0.148)	0.893*** (0.145)	1.285*** (0.143)	0.862*** (0.150)
<i>ROA</i>	0.138 (0.148)	0.015 (0.216)	0.172 (0.205)	0.164 (0.215)	0.050 (0.206)
<i>OWN</i>	0.154** (0.074)	0.050 (0.099)	0.224** (0.113)	0.022 (0.104)	0.222** (0.107)
Observations	10366	5183	5183	5183	5183

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed Z significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.



**Table 9**  
**Family ownership effect separated into good and poor CG sub-samples: *OWN=Family***

$$LN\text{FEE} = \beta_0 + \beta_1\text{BIG} + \beta_2\text{LNMVE} + \beta_3\text{MA} + \beta_4\text{FINANCING} + \beta_5\text{MB} + \beta_6\text{LEVE} + \beta_7\text{ROA} + \beta_8\text{INVREC} \\ + \beta_9\text{LOSS} + \beta_{10}\text{SPECIAL} + \beta_{11}\text{OWN} + \text{Industry effects} + \text{Year effects} + \varepsilon$$

Variable	Full	GIndexI		GIndexII	
		Poor CG	Good CG	Poor CG	Good CG
<i>Intercept</i>	10.610*** (0.262)	10.456*** (0.241)	10.743*** (0.347)	10.853*** (0.442)	10.455*** (0.265)
<i>BIG</i>	0.236*** (0.041)	0.297*** (0.052)	0.165*** (0.054)	0.255*** (0.054)	0.221*** (0.056)
<i>LNMVE</i>	0.479*** (0.009)	0.465*** (0.012)	0.484*** (0.012)	0.450*** (0.013)	0.492*** (0.011)
<i>MA</i>	0.011 (0.020)	0.006 (0.025)	0.017 (0.027)	-0.005 (0.025)	0.040 (0.027)
<i>FINANCING</i>	-0.074*** (0.019)	-0.102*** (0.025)	-0.051** (0.026)	-0.079*** (0.025)	-0.063** (0.026)
<i>MB</i>	-0.123*** (0.006)	-0.120*** (0.007)	-0.126*** (0.008)	-0.121*** (0.007)	-0.121*** (0.008)
<i>LEVE</i>	1.341*** (0.062)	1.219*** (0.076)	1.412*** (0.082)	1.288*** (0.078)	1.376*** (0.084)
<i>ROA</i>	-0.115 (0.092)	-0.151 (0.134)	-0.083 (0.118)	-0.207* (0.112)	-0.016 (0.122)
<i>INVREC</i>	0.937*** (0.089)	0.949*** (0.109)	0.923*** (0.116)	0.936*** (0.104)	0.908*** (0.122)
<i>LOSS</i>	0.232*** (0.029)	0.220*** (0.037)	0.222*** (0.038)	0.212*** (0.036)	0.241*** (0.038)
<i>SPECIAL</i>	0.244*** (0.020)	0.245*** (0.024)	0.239*** (0.029)	0.242*** (0.024)	0.255*** (0.030)
<i>OWN</i>	-0.077** (0.039)	-0.109** (0.048)	-0.009 (0.056)	-0.164*** (0.054)	0.005 (0.050)
Observations	10366	5183	5183	5183	5183
R-squared	0.636	0.622	0.649	0.597	0.663

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 10**  
**Family ownership effect separated into good and poor CG sub-samples:  $OWN=FamilyPlus$**

$$LNFE = \beta_0 + \beta_1 BIG + \beta_2 LNMVE + \beta_3 MA + \beta_4 FINANCING + \beta_5 MB + \beta_6 LEVE + \beta_7 ROA + \beta_8 INVREC + \beta_9 LOSS + \beta_{10} SPECIAL + \beta_{11} OWN + Industry\ effects + Year\ effects + \varepsilon$$

Variable	Full	GIndexI		GIndexII	
		Poor CG	Good CG	Poor CG	Good CG
<i>Intercept</i>	10.606*** (0.263)	10.449*** (0.243)	10.744*** (0.347)	10.849*** (0.444)	10.452*** (0.265)
<i>BIG</i>	0.235*** (0.041)	0.296*** (0.053)	0.164*** (0.054)	0.251*** (0.055)	0.222*** (0.056)
<i>LN MVE</i>	0.480*** (0.009)	0.465*** (0.012)	0.484*** (0.012)	0.451*** (0.013)	0.492*** (0.011)
<i>MA</i>	0.012 (0.020)	0.008 (0.025)	0.017 (0.027)	-0.002 (0.025)	0.040 (0.027)
<i>FINANCING</i>	-0.073*** (0.019)	-0.101*** (0.025)	-0.051** (0.026)	-0.078*** (0.025)	-0.063** (0.026)
<i>MB</i>	-0.123*** (0.006)	-0.120*** (0.007)	-0.126*** (0.008)	-0.121*** (0.007)	-0.121*** (0.008)
<i>LEVE</i>	1.340*** (0.062)	1.217*** (0.076)	1.411*** (0.082)	1.287*** (0.077)	1.377*** (0.084)
<i>ROA</i>	-0.116 (0.092)	-0.150 (0.134)	-0.083 (0.118)	-0.205* (0.112)	-0.016 (0.122)
<i>INVREC</i>	0.936*** (0.089)	0.946*** (0.109)	0.923*** (0.116)	0.929*** (0.104)	0.908*** (0.122)
<i>LOSS</i>	0.232*** (0.029)	0.222*** (0.037)	0.222*** (0.038)	0.215*** (0.036)	0.241*** (0.038)
<i>SPECIAL</i>	0.245*** (0.020)	0.245*** (0.024)	0.239*** (0.029)	0.243*** (0.024)	0.255*** (0.030)
<i>OWN</i>	-0.064* (0.036)	-0.087** (0.044)	-0.014 (0.050)	-0.144*** (0.049)	0.017 (0.048)
Observations	10366	5183	5183	5183	5183
R-squared	0.636	0.622	0.649	0.597	0.663

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 11**  
**The joint effect of family control and good corporate governance on audit fees**

$$LNFE = \beta_0 + \beta_1 BIG + \beta_2 LNMVE + \beta_3 MA + \beta_4 FINANCING + \beta_5 MB + \beta_6 LEVE + \beta_7 ROA + \beta_8 INVREC + \beta_9 LOSS + \beta_{10} SPECIAL + \beta_{11} OWN + \beta_{12} DGIndex + \beta_{13} OWN * DGIndex + \text{Industry effects} + \text{Year effects} + \varepsilon$$

Variables	OWN=	OWN=	OWN=	OWN=
	Family DGIndex=	Family DGIndex=	FamilyPlus DGIndex=	FamilyPlus DGIndex=
	<u>DGIndexI</u>	<u>DGIndexII</u>	<u>DGIndexI</u>	<u>DGIndexII</u>
Intercept	10.586*** (0.111)	10.612*** (0.111)	10.582*** (0.258)	10.610*** (0.262)
BIG	0.233*** (0.024)	0.239*** (0.024)	0.232*** (0.041)	0.237*** (0.041)
LN MVE	0.476*** (0.005)	0.476*** (0.005)	0.477*** (0.009)	0.476*** (0.009)
MA	0.012 (0.017)	0.014 (0.017)	0.013 (0.020)	0.016 (0.020)
FINANCING	-0.074*** (0.016)	-0.072*** (0.016)	-0.073*** (0.019)	-0.071*** (0.019)
MB	-0.123*** (0.004)	-0.122*** (0.004)	-0.123*** (0.006)	-0.122*** (0.006)
LEVE	1.330*** (0.034)	1.340*** (0.034)	1.329*** (0.062)	1.340*** (0.062)
ROA	-0.107* (0.056)	-0.104* (0.056)	-0.107 (0.092)	-0.103 (0.092)
INVREC	0.922*** (0.050)	0.923*** (0.051)	0.921*** (0.089)	0.920*** (0.089)
LOSS	0.228*** (0.021)	0.233*** (0.021)	0.228*** (0.028)	0.234*** (0.029)
SPECIAL	0.238*** (0.015)	0.243*** (0.015)	0.238*** (0.020)	0.243*** (0.020)
OWN	-0.110*** (0.033)	-0.159*** (0.036)	-0.087* (0.045)	-0.139*** (0.049)
DGIndex	0.104*** (0.013)	0.045*** (0.013)	0.104*** (0.018)	0.042** (0.019)
OWN*DGIndex	0.090* (0.049)	0.152*** (0.049)	0.067 (0.062)	0.147** (0.064)
Observations	10366	10366	10366	10366
R-squared	0.639	0.637	0.639	0.637

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 12**  
**Specialist auditor premiums: OWN=Family**

$$LN\text{FEE} = \beta_0 + \beta_1\text{BIG} + \beta_2\text{LNMVE} + \beta_3\text{MA} + \beta_4\text{FINANCING} + \beta_5\text{MB} + \beta_6\text{LEVE} + \beta_7\text{ROA} \\ + \beta_8\text{INVREC} + \beta_9\text{LOSS} + \beta_{10}\text{SPECIAL} + \beta_{11}\text{OWN} + \beta_{12}\text{SPECIALIST} \\ + \text{Industry effects} + \text{Year effects} + \varepsilon$$

<i>Variables</i>	<i>Full</i>	<i>GIndexI</i>		<i>GIndexII</i>	
		<i>Poor CG</i>	<i>Good CG</i>	<i>Poor CG</i>	<i>Good CG</i>
<i>Intercept</i>	10.616*** (0.264)	10.472*** (0.258)	10.744*** (0.348)	10.854*** (0.448)	10.466*** (0.260)
<i>BIG</i>	0.220*** (0.042)	0.274*** (0.053)	0.158*** (0.055)	0.246*** (0.055)	0.201*** (0.057)
<i>LNMVE</i>	0.477*** (0.009)	0.461*** (0.012)	0.483*** (0.012)	0.449*** (0.013)	0.490*** (0.011)
<i>MA</i>	0.013 (0.020)	0.009 (0.025)	0.018 (0.027)	-0.003 (0.025)	0.041 (0.028)
<i>FINANCING</i>	-0.073*** (0.019)	-0.100*** (0.025)	-0.050** (0.026)	-0.077*** (0.025)	-0.064** (0.026)
<i>MB</i>	-0.123*** (0.006)	-0.120*** (0.007)	-0.126*** (0.008)	-0.121*** (0.007)	-0.120*** (0.008)
<i>LEVE</i>	1.340*** (0.062)	1.214*** (0.076)	1.413*** (0.082)	1.287*** (0.078)	1.377*** (0.084)
<i>ROA</i>	-0.117 (0.092)	-0.145 (0.133)	-0.085 (0.118)	-0.206* (0.112)	-0.021 (0.122)
<i>INVREC</i>	0.936*** (0.089)	0.952*** (0.109)	0.922*** (0.116)	0.937*** (0.104)	0.907*** (0.121)
<i>LOSS</i>	0.231*** (0.028)	0.221*** (0.037)	0.222*** (0.038)	0.212*** (0.036)	0.240*** (0.038)
<i>SPECIAL</i>	0.244*** (0.020)	0.244*** (0.024)	0.239*** (0.029)	0.241*** (0.024)	0.256*** (0.029)
<i>OWN</i>	-0.078** (0.039)	-0.110** (0.048)	-0.009 (0.056)	-0.164*** (0.054)	0.003 (0.050)
<i>SPECIALIST</i>	0.063** (0.025)	0.100*** (0.030)	0.023 (0.032)	0.075** (0.033)	0.040 (0.030)
Observations	10366	5183	5183	5183	5183
R-squared	0.637	0.624	0.649	0.597	0.663
T value for Coefficient difference			126.38		56.49

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 13**

**Other measures of concentrated holdings: *OWN= CEO Holdings/Insider holdings/Founder holdings***

$$LNFEF = \beta_0 + \beta_1 BIG + \beta_2 LNMVE + \beta_3 MA + \beta_4 FINANCING + \beta_5 MB + \beta_6 LEVE + \beta_7 ROA + \beta_8 INVREC + \beta_9 LOSS + \beta_{10} SPECIAL + \beta_{11} OWN + Industry\ effects + Year\ effects + \varepsilon$$

Variable	Full	GIndexI		GIndexII	
		Poor CG	Good CG	Poor CG	Good CG
CEO Holdings	-0.439 (-3.340) <sup>***</sup>	-0.345 (-2.330) <sup>**</sup>	-0.262 (-0.980)	-0.470 (-3.080) <sup>***</sup>	-0.318 (-1.390)
Insiders Holdings	-0.249 <sup>**</sup> (0.107)	-0.233 <sup>*</sup> (0.128)	-0.124 (0.159)	-0.338 <sup>**</sup> (0.142)	-0.141 (0.143)
Founder	-0.094 <sup>***</sup> (0.029)	-0.097 <sup>***</sup> (0.031)	-0.086 (0.058)	-0.098 <sup>***</sup> (0.030)	-0.085 (0.059)

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> The coefficients of control variables are not shown.

**Table 14**

**Results of regressions with different measures of family ownership separated into good and poor corporate governance firms using disaggregated components of CG:  $OWN=Family$**

$$LNFE = \beta_0 + \beta_1 BIG + \beta_2 LNMVE + \beta_3 MA + \beta_4 FINANCING + \beta_5 MB + \beta_6 LEVE + \beta_7 ROA + \beta_8 INVREC + \beta_9 LOSS + \beta_{10} SPECIAL + \beta_{11} OWN + Industry\ effects + Year\ effects + \varepsilon$$

Variable	%Outsiders		Independence Index		Meetings Index		Size Index		CEO Power	
	Low	High	Low	High	Low	High	Small	Big	Strong	Weak
Intercept	10.782*** (0.168)	10.557*** (0.146)	10.576*** (0.173)	10.728*** (0.143)	10.480*** (0.163)	10.812*** (0.338)	10.505*** (0.160)	11.010*** (0.155)	10.790*** (0.311)	10.215*** (0.224)
BIG	0.256*** (0.030)	0.191*** (0.040)	0.269*** (0.031)	0.182*** (0.039)	0.288*** (0.032)	0.183*** (0.057)	0.143*** (0.044)	0.309*** (0.029)	0.255*** (0.055)	0.217*** (0.054)
LNMVE	0.441*** (0.008)	0.507*** (0.007)	0.429*** (0.008)	0.508*** (0.007)	0.452*** (0.007)	0.494*** (0.012)	0.505*** (0.007)	0.404*** (0.009)	0.481*** (0.011)	0.479*** (0.012)
MA	0.028 (0.024)	-0.002 (0.023)	0.042* (0.024)	-0.014 (0.022)	0.034 (0.024)	-0.021 (0.025)	0.022 (0.022)	0.019 (0.025)	-0.014 (0.026)	0.035 (0.027)
FINANCING	-0.093*** (0.023)	-0.054** (0.022)	-0.083*** (0.023)	-0.072*** (0.021)	-0.083*** (0.021)	-0.072*** (0.026)	-0.077*** (0.022)	-0.068*** (0.022)	-0.079*** (0.024)	-0.068** (0.027)
MB	-0.119*** (0.005)	-0.123*** (0.005)	-0.113*** (0.006)	-0.129*** (0.005)	-0.111*** (0.005)	-0.126*** (0.007)	-0.131*** (0.005)	-0.104*** (0.005)	-0.117*** (0.007)	-0.129*** (0.008)
LEVE	1.300*** (0.049)	1.314*** (0.047)	1.250*** (0.049)	1.365*** (0.046)	1.207*** (0.048)	1.381*** (0.077)	1.559*** (0.049)	1.081*** (0.047)	1.264*** (0.076)	1.419*** (0.081)
ROA	0.060 (0.077)	-0.328*** (0.082)	0.026 (0.077)	-0.279*** (0.081)	-0.178** (0.083)	-0.040 (0.122)	-0.336*** (0.085)	0.089 (0.074)	-0.314*** (0.110)	0.054 (0.136)
INVREC	0.873*** (0.071)	0.995*** (0.071)	0.794*** (0.072)	1.067*** (0.070)	0.941*** (0.068)	0.976*** (0.118)	1.040*** (0.072)	0.820*** (0.070)	1.095*** (0.106)	0.766*** (0.116)
LOSS	0.269*** (0.030)	0.192*** (0.030)	0.257*** (0.030)	0.199*** (0.030)	0.205*** (0.031)	0.226*** (0.038)	0.193*** (0.031)	0.250*** (0.029)	0.189*** (0.037)	0.269*** (0.039)
SPECIAL	0.266*** (0.021)	0.211*** (0.022)	0.273*** (0.022)	0.199*** (0.021)	0.247*** (0.020)	0.215*** (0.028)	0.221*** (0.022)	0.259*** (0.021)	0.239*** (0.024)	0.249*** (0.028)
OWN	-0.055* (0.029)	-0.032 (0.058)	-0.070** (0.030)	0.043 (0.048)	-0.061* (0.032)	-0.065 (0.053)	-0.085** (0.037)	-0.051 (0.034)	-0.145*** (0.054)	-0.011 (0.051)
Obs.	5183	5183	5180	5186	5195	5171	5165	5201	5231	5135
R-squared	0.586	0.674	0.564	0.686	0.614	0.653	0.670	0.506	0.661	0.616

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

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**Table 15**  
**Large and small family firm and audit fees: OWN=Family**

$$LNFEF = \beta_0 + \beta_1 BIG + \beta_2 LNMVE + \beta_3 MA + \beta_4 FINANCING + \beta_5 MB + \beta_6 LEVE + \beta_7 ROA + \beta_8 INVREC + \beta_9 LOSS + \beta_{10} SPECIAL + \beta_{11} OWN + \text{Industry effects} + \text{Year effects} + \varepsilon$$

<i>Variable</i>	<i>Full</i>	<i>Lowest quartile</i>	<i>Highest quartile</i>
<i>Intercept</i>	10.961*** (0.306)	12.676*** (0.455)	10.583*** (0.875)
<i>BIG</i>	0.265** (0.104)	0.306*** (0.077)	-0.196 (0.312)
<i>LN MVE</i>	0.483*** (0.025)	0.151*** (0.054)	0.550*** (0.056)
<i>MA</i>	0.065 (0.072)	0.019 (0.114)	0.052 (0.085)
<i>FINANCING</i>	-0.053 (0.073)	-0.055 (0.077)	-0.153 (0.105)
<i>MB</i>	-0.106*** (0.018)	-0.042* (0.023)	-0.111*** (0.028)
<i>LEVE</i>	1.219*** (0.193)	0.438** (0.189)	1.960*** (0.299)
<i>ROA</i>	-0.293 (0.328)	-0.046 (0.238)	-1.502*** (0.467)
<i>INVREC</i>	1.221*** (0.261)	1.291*** (0.241)	1.880*** (0.469)
<i>LOSS</i>	0.234** (0.097)	0.165 (0.104)	-0.085 (0.114)
<i>SPECIAL</i>	0.121 (0.078)	0.152** (0.074)	0.125 (0.115)
<i>OWN</i>	-0.125* (0.070)	-0.179*** (0.066)	-0.123 (0.093)
Observations	748	374	374
R-squared	0.700	0.323	0.608

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.



**Table 16**  
**Family ownership and specialist auditor choice in the small firms: *OWN = Family***

$$SPECIALIST = \beta_0 + \beta_1 LNMVE + \beta_2 LEVE + \beta_3 ROA + \beta_4 OWN \\ + \text{Industry effects} + \text{Year effects} + \varepsilon$$

Variables	Full	GIndexI		GIndexII	
		Poor CG	Good CG	Poor CG	Good CG
Intercept	-1.577*** (0.229)	-2.252*** (0.341)	-1.009*** (0.312)	-2.002*** (0.336)	-1.209*** (0.315)
LNMVE	0.187*** (0.037)	0.307*** (0.056)	0.083 (0.051)	0.242*** (0.055)	0.143*** (0.052)
LEVE	0.901*** (0.134)	0.918*** (0.191)	0.885*** (0.190)	1.115*** (0.188)	0.668*** (0.193)
ROA	0.126 (0.172)	-0.173 (0.257)	0.369 (0.235)	0.167 (0.254)	0.043 (0.238)
OWN	0.265** (0.111)	0.040 (0.149)	0.610*** (0.174)	0.073 (0.164)	0.420*** (0.154)
Observations	4504	2252	2252	2252	2252

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed Z significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 17****Joint effect of family ownership and good corporate governance on audit fees in the small firms**

$$LNFEF = \beta_0 + \beta_1 BIG + \beta_2 LNMVE + \beta_3 MA + \beta_4 FINANCING + \beta_5 MB + \beta_6 LEVE + \beta_7 ROA \\ + \beta_8 INVREC + \beta_9 LOSS + \beta_{10} SPECIAL + \beta_{11} OWN + \beta_{12} DGIndex \\ + \beta_{13} OWN * DGIndex + \text{Industry effects} + \text{Year effects} + \varepsilon$$

Variable	<i>OWN = Family</i> <i>DGIndex = DGIndexI</i>	<i>OWN = Family</i> <i>DGIndex = DGIndexII</i>
<i>Intercept</i>	11.257*** (0.219)	11.309*** (0.219)
<i>BIG</i>	0.392*** (0.027)	0.397*** (0.027)
<i>LN MVE</i>	0.293*** (0.013)	0.292*** (0.013)
<i>MA</i>	0.013 (0.028)	0.012 (0.028)
<i>FINANCING</i>	-0.055** (0.023)	-0.057** (0.023)
<i>MB</i>	-0.101*** (0.006)	-0.100*** (0.006)
<i>LEVE</i>	1.063*** (0.047)	1.066*** (0.048)
<i>ROA</i>	0.300*** (0.066)	0.296*** (0.066)
<i>INVREC</i>	0.666*** (0.071)	0.667*** (0.071)
<i>LOSS</i>	0.266*** (0.027)	0.270*** (0.027)
<i>SPECIAL</i>	0.254*** (0.023)	0.259*** (0.023)
<i>OWN</i>	-0.131*** (0.048)	-0.210*** (0.052)
<i>DGIndex</i>	0.085*** (0.021)	-0.001 (0.021)
<i>OWN*DGIndex</i>	0.140* (0.071)	0.244*** (0.071)
Observations	4504	4504
R-squared	0.407	0.405

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

**Table 18**

**Entrenchment test: Effect of concentrated family ownership in the sub-sample where CEO ownership is in the highest quartile:  $OWN=Family$**

$$LNFE = \beta_0 + \beta_1 BIG + \beta_2 LNMVE + \beta_3 MA + \beta_4 FINANCING + \beta_5 MB + \beta_6 LEVE + \beta_7 ROA + \beta_8 INVREC + \beta_9 LOSS + \beta_{10} SPECIAL + \beta_{11} OWN + \text{Industry effects} + \text{Year effects} + \varepsilon$$

Variable	$OWN=Family$
<i>Intercept</i>	10.680*** (0.258)
<i>BIG</i>	0.307*** (0.061)
<i>LN MVE</i>	0.431*** (0.019)
<i>MA</i>	0.065* (0.037)
<i>FINANCING</i>	-0.090** (0.037)
<i>MB</i>	-0.112*** (0.010)
<i>LEVE</i>	1.178*** (0.101)
<i>ROA</i>	-0.053 (0.141)
<i>INVREC</i>	0.692*** (0.157)
<i>LOSS</i>	0.235*** (0.050)
<i>SPECIAL</i>	0.267*** (0.035)
<i>OWN</i>	-0.044 (0.059)
Observations	2591
R-squared	0.531

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed T significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses;

<sup>c</sup> Industry and year dummies included in the regression but not shown in the Table.

Table 19

**Ordered logistic regression of S&P Long-Term Credit Rating on Family ownership:  
OWN=Family**

$$Rating = \beta_0 + \beta_1 SIZE + \beta_2 ROA + \beta_3 DEBT + \beta_4 INTCOV + \beta_5 BETA + \beta_6 BM + \beta_7 OWN + \varepsilon$$

Variable	Full	GIndexI		GIndexII	
		Poor CG	Good CG	Poor CG	Good CG
SIZE	-0.868*** (0.024)	-0.937*** (0.035)	-0.814*** (0.033)	-0.895*** (0.036)	-0.819*** (0.034)
ROA	-6.109*** (0.368)	-5.085*** (0.517)	-7.169*** (0.530)	-6.093*** (0.530)	-5.978*** (0.514)
DEBT	3.710*** (0.162)	4.016*** (0.249)	3.551*** (0.216)	3.799*** (0.227)	3.587*** (0.233)
INTCOV	-0.000 (0.000)	0.000 (0.000)	-0.001** (0.001)	0.000 (0.001)	-0.001* (0.001)
BETA	1.416*** (0.048)	1.442*** (0.070)	1.385*** (0.067)	1.342*** (0.066)	1.510*** (0.071)
BM	0.714*** (0.064)	1.034*** (0.101)	0.458*** (0.086)	0.873*** (0.094)	0.575*** (0.089)
OWN	-0.304*** (0.106)	-0.191 (0.140)	-0.426*** (0.164)	-0.082 (0.152)	-0.459*** (0.147)
Observations	4667	2333	2334	2334	2333

<sup>a</sup> \*, \*\*, \*\*\* Indicates two-tailed Z significance at the 10%, 5%, and 1% levels, respectively;

<sup>b</sup> Robust standard errors in parentheses.

Rating= S&P Issuer Long-Term Credit Rating, coded 1 for AAA rating, and 20 for D rating.

SIZE= log of total assets.

ROA= net income before extraordinary items (Compustat data item IB) divided by total assets;

DEBT= total interest bearing debt (Compustat #9 and #34) to total assets.

INTCOV= Operating income to interest expense.

BETA= the 5-year rolling pre-estimated beta obtained from firm-specific CAPM estimations using the past 5 years of data with at least 18 monthly returns.

BM= Book value of equity (Compustat #60) divided by market value of equity at fiscal year-end (Compustat #199 × #25).

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