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Family Ownership, Auditor Choice and Audit Fees: Evidence from Hong Kong

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Abstract

Purpose –The primary purpose of this paper is to examine the impact of family control/ownership on auditor choice and audit fees in Hong Kong. Besides, this paper also addresses the impact of multiple directorship of audit committee members on these two external auditing dimensions.

Design/methodology/approach –Panel data technique is used to perform analysis. The unbalanced panel data set consists of 2,724 firm-year observations for nine years from year 2001 to 2009.

Findings –The results indicate that family firms have a higher likelihood to appoint Big 5 auditors, it supports the signaling hypothesis. Contrasting the perceived higher audit risk, they incur lower audit fees. The results also show the independent audit committee members with multiple directorships are not affected by their busyness. Our results are also robust to the alternative definition of family firms and by using the sub-sample within 2004 - 2009. We also find that the firms controlled by recognized Big family in Hong Kong society incur higher audit fees but no support for family firm incurring higher non audit fee.

Originality/value –First, our paper responds to the recent call for research for auditor choice and audit fees within the context of emerging economies. Secondly, this paper also explores other determinants of auditor choice and audit fees in HK such as the characteristics of the audit committee and multiple directorships. Thirdly, our findings contribute to the family firms' literature by shedding light on family firms do enhance their external auditing function to improve the credibility of financial reporting of the firms which is expected to help investors and public in HK to know more about the effect of family control on the external auditing to protect their interest. The findings in this paper are also valuable to regulators who might concern the corporate governance and informativeness in family firms.

Keywords: Family ownership, Family control audit committee, Auditor choice, Audit fees, Hong Kong

1. Introduction

Recently, family firms in Hong Kong (HK) have received increasing attention, including connected transactions and the firms' corporate governance issues. The prevalence of family controlled firms in HK and their potential incentive to "tunneling" (e.g. Cheung *et al.*, 2006; Lei & Song, 2011) raise the problem of how family firms affect different aspects of monitoring mechanisms, especially for the independent monitoring mechanisms, such as the external audit. Related-party transactions regularly appear in family firms, and internal controls are vastly different from non-family firms. Jiang, Wan and Zhao (2015) shows that in China higher reputation director in Chinese firms can provide better external monitoring mechanism. However, internally, the audit risks of family firms are generally perceived higher as their internal controls are inferior.

As an inevitable one of the effective external corporate governance mechanisms, external audits have a responsibility to mitigate the agency problems, reduce the information asymmetry and enhance financial reporting informativeness and credibility (Cohen *et al.*, 2002; Fan & Wong, 2005; Jensen & Meckling, 1976; Leventis & Dimitropoulos, 2010; Lin & Liu, 2009). In emerging economies, this is even more critical due to the difficulty in mitigating the conflicts between controlling shareholders and the minority shareholders by using internal corporate control mechanisms (Fan & Wong, 2005).

The distinctive characteristics of family firms are supposed to be instrumental in their auditor choice and the level of audit fees in different ways because it is argued that firms with a different agency conflicts exhibit varied demands for audit quality (Lin & Liu, 2009). The collective effect of less serious Type I but more serious Type II agency problem in family controlled firms certainly lead to two questions: (1) Do family firms in HK choose higher or lower quality auditor? While, it is argued that given the same profit level of firms, higher audit risks imply more audit workloads thus higher audit fee. (2) Do family firms pay higher audit fee for their perceived risk?

Overall, theories concerning Type I and II agency problems predict that family firms have lower demand for high-quality auditors. In contrary, Carey *et al.* (2000) find that firms will increase demand for voluntary audits when agency costs increase. In this viewpoint, family

firms have higher likelihood to engage Big N auditors to ensure high-quality audit as a bonding mechanism or so-called "signaling effect" (Jensen & Meckling, 1976). Overall, this implies that the likelihood of family firms to engage the high-quality auditor is still in doubt.

Similarly, in relation to audit fees, the theory from demand-side perspective argues that due to facing less severe Type I agency problem but more serious Type II agency problem, family firms have reduced demand for quality auditing service, and thus incurred lower audit fees. In terms of the position of auditor risk assessment, the theory from supply-side perspective argues that the expropriation incentives and opportunities for the family owner are relatively high, and they have influence over the financial reporting. Consequently, it causes *higher* audit risk in the risk assessment and accordingly the auditors need to spend more audit efforts, resulting in *higher* audit fee. Alternatively, family firms can also be perceived to have *lower* audit risk because of better and closer internal monitoring and lower conflict of interest between the family shareholder and management, and subsequently incur *lower* audit fees. Overall, whether more or less audit fees for family firms than those in non-family firms again is still controversial.

HK institutional settings present an interesting arena to test the related hypotheses. Unlike those in developed economies, HK is a combination of the East and West culture. From Hofstede (1994) model, the high power distance, low individualism, low uncertainty avoidance, high Long-term orientation makes HK a unique cultural environment to investigate other than US market. The legal environment of HK is strongest legal protections among all emerging markets (e.g. La Porta *et al.*, 2000), implying that financial reporting quality is also scrutinized. Furthermore, the listing rules require disclosure of all material connected transactions. Besides, there is evidence of tunneling in HK (Cheung et al., 2006, Lei and Song, 2011). Furthermore, family firms are predominant in HK firms, across all sizes and industry. Overall, the corporate governance in HK is among the best in Asian emerging markets, and thus, it is plausible that family firms signal higher financial reporting quality through auditor choice, yet the actual costs can even be lower.

On the other hand, a matter of multiple directorships attracted increasing attention from policymakers, investors and practitioners over the world. In 2010, HK Exchanges and Clearing issued a proposal to discuss whether to impose a restriction on the number of INEDs' positions one can serve. However, few empirical studies are found to support avocation or opposition for this restriction. This paper also attempts to address the following sub-research question: (3) How multiple directorships of the independent audit committee members influence the audit choice and audit fees?

Using unique unbalanced panel dataset of 2,724 firm-year observations of firms listed on the main board of HK during the period 2001–2009, our results find that family firms are more likely to employ Big 5 auditors. In other words, it supports the signaling incentive of family owners that family firms are aware of the concerns on the presumed Type II agency problem in the family firm, so they signal they have taken effective measures to indicate their robust corporate governance, transparency and the credibility of financial statement by engaging high-quality auditors. Surprisingly, contrasting the perceived higher audit risk, they incur

lower audit fees. This finding may support the argument the benefit from the reduction of the Type I agency problem outweighs the harm from the increase of the Type II agency problem (Fan & Wong, 2005; Ho & Kang, 2013). Hence it can reduce audit work for the firms accordingly, and subsequently auditor may charge lower fees.

The results also show that firms with higher multiple directorships level among independent audit committee members are higher likely to choose Big 5 auditor but incur lower audit fee, this finding collectively support the quality hypothesis, implying that monitoring quality is not affected by their busyness. The above results are robust to alternative definitions of family firms and with the sub-sample within 2004 – 2009 which is the period after the corporate governance reform in HK in 2003. We also find that the firms controlled by recognized Big families in Hong Kong society incur higher audit fees.

In addition, even though family firms are found to incur lower audit fees compared with non-family firms, we do not find any evidence to support the notion that family firms incur higher non-audit fees from their incumbent auditors than those in non-family firms, hence, it is no support for the independence issues that the lower audit fees related to the higher non-audit fees.

Our paper contributes to the extant literature and to the current regulatory developments in the following ways. First, we examine how family control influences the firm's decision in auditor choice and audit fees simultaneously incorporating corporate governance variables within the context of emerging economies where relatively few literatures are found (Lin & Liu, 2009; Trotman & Trotman, 2010). Given the different effect of agency problems among family firms, overall models for the analyses of auditor choice and audit fees may be substantially biased if we ignore the effect of family influence. To the best of our knowledge, there is no prior study to investigate the impact of family control on the auditor choice using HK data alone. Our study also fills this gap. Although Gul *et al.* (1997) has found a negative relationship between family control and audit fees using HK data. However, the evidences of Gul *et al.* (1997) are obsolete and incomplete. Our results should be more robust by using panel data technique, more updated data and relatively larger sample size.

Secondly, this paper also explores other determinants of auditor choice and audit fees that have not been studied in prior literatures in HK such as the characteristics of the audit committee. More specifically, prior auditing literatures only paid little focus on the association between multiple directorships and audit quality. This paper also extends the recent HK study of Lei and Deng (2013) which investigate the impact of multiple directorships among independent directors on the firm value.

Finally, our findings will also contribute to the family firms' literatures by shedding light on family firms do enhance their external auditing function to improve the credibility of financial reporting of the firms. It is also expected to help investors and public in HK to know more about the effect of family control characteristic on corporate governance mechanism, more specifically on the external auditing to protect their interest. The findings in this paper are also valuable to regulators who might concern the corporate governance and

informativeness in family firms. The implications of this study also help regulators to consider the auditing setting and develop their future policy.

The remainder of the paper is organized as follows: Section 2 discusses the institutional and cultural background of HK. Section 3 reviews prior literatures and develops our hypotheses. Section 4 discusses the sample and research design. Section 5 presents our empirical results, and we analyze their robustness and perform two additional tests in Section 6. Section 7 summarizes concluding remarks.

2. Institutional and Cultural Background

2.1 Institutional Environments of Hong Kong Firms

In HK, around 70% of listed firms are controlled by either their founders or members in the founding families (La Porta *et al.*, 1999). HK's legal system is inherited from the English Common Law system. In other words, the firms in HK are embedded within a western regulatory structure. Most HK listed firms borrowed values from both Chinese family traditional value as well as developed economies such as the United Kingdom. Therefore, inevitably, there is a significant difference between HK and western developed countries in terms of the business environment, especially in the perspective of "corporate governance, ownership and control" (Jaggi *et al.*, 2009).

Jaggi *et al.* (2009) highlighted that "in HK, personal networking so-called "guanxi" has great influence on the corporate governance structure which has the characteristics of greater emphasis on informal relationships instead of "formal written contracts". As a result, external market control mechanisms for the firms may be perceived as weak, especially for family firms in HK (Claessens *et al.*, 2000; Jaggi *et al.*, 2009).

Meanwhile, due to the families' ownership concentration, there are only few hostile takeovers and mergers and acquisitions. HK firms usually borrow money from the bank rather than public debt financing, which also differs from US firms (Jaggi *et al.*, 2009).

3. Literature Review and Hypothesis Development

3.1 Studies on Family Firms in Hong Kong

HK listed firms are argued to have higher probability to suffer from the Type II agency problem as they are commonly characterized by family-based and concentrated ownership (S. Ho & Hutchinson, 2010). The early HK studies generally show that the family ownership/control has an adverse effect on corporate governance. For example, family ownership/control significantly reduces the effectiveness of audit committees (Chau & Leung, 2006; Jaggi & Leung, 2007), reduces the effectiveness of board independence on financial disclosures (Chen & Jaggi, 2000), have a higher likelihood to occur earning management (Jaggi *et al.*, 2009), have a higher likelihood with less level of information disclosure (Chau & Gray, 2002; S. S. M. Ho & Wong, 2001). Using 346 firm-year observations and covering the periods of 2001-2003, Lam and Lee (2012) indicate family ownership has an adverse effect on the monitoring effectiveness of board committees and remuneration committees and firm performance in HK. Therefore it would be perceived that the audit risk should be higher

for family firms by the public.

3.2 Family Firms and Auditor Choice

3.2.1 Type I Agency Problem and Auditor Choice

Big N auditors have better audit quality due to their large scale, expertise, and reputation risk (Barton, 2005; DeAngelo, 1981). Therefore, the firms with higher Type I agency problem tend to choose a Big N audit firm to mitigate this agency problem and vice versa (Ho & Kang, 2013). The controlling family owners normally have strong motivations to monitor the management and minimize information asymmetry which leads to less severe Type I agency problem (Ali *et al.*, 2007; Anderson *et al.*, 2003; Shleifer & Vishny, 1997; Wang, 2006). Consistent with this notion, prior empirical studies also find that family firms have a lower likelihood to engage Big N auditors (Anderson *et al.*, 2003; Shleifer & Vishny, 1997).

Therefore, due to less severe Type I agency problem inherently, family firms have a lower tendency to select high-quality auditors proxied by Big N auditors in mitigating Type I agency problem.

3.2.2 Type II Agency Problem and Auditor Choice

Conversely, family firms face the Type II agency problem due to the concentrated ownership held by the family. Family firm owners generally have greater opportunity to take entrenchment activities, e.g. related-party transactions due to their closer internal monitoring and control over their firms. While, given the high ownership concentration, the family firms owner may not be challenged by the board of directors for their entrenchment activities (Claessens *et al.*, 2002). Then they would like to hide such conducts and increase the financial reporting opacity by engaging relatively lower quality auditors such as non-Big N auditors.

3.2.3 Signaling Hypothesis on Auditor Choice

However, the perceived entrenchment problems may also bring adverse effects to the family firm owners. Claessens *et al.* (2002) argue that outside investors concern the potential entrenchment problems, and therefore discount the firm values. As a result, this may make the firms more difficult and costly for financing in the form of equity or bonds.

As a result, the controlling family shareholder may tend to engage a high-quality external auditor as an additional monitoring mechanism to signify their incentives to reduce agency problem through preventing expropriation behavior by themselves (Ang *et al.*, 2000). Then, their purpose is to convince minority shareholders and potential investors regarding the credibility of its financial reporting in exchange for the benefit of better contracting terms and better share price. This practice may be more common in large families because they are usually willing to invest for the long-term success and maintain the good family reputation and family glory. In line with this notion, Leung *et al.* (2012) document that HK family firms, especially when seeking additional financing, disclose more information than non-family firms to reassure outside investors and creditors that they are providing credible financial reporting. Fan and Wong (2005) find a positive relationship between the Big N auditor choice

and the wedge of vote-cash flow rights in eight East Asia firms, suggesting that HK family firms may signal their motivations to small investors through auditor choice.

Overall, consistent with Fan and Wong (2005), we argue that given increasing corporate governance concerns, HK family firms may be more concerned with the capital market confidence, the signaling hypothesis may have the dominant effect in predicting the family influence on the auditor choice. Therefore, we expect that HK family firms may tend to appoint high-quality external auditors to signify that they are already doing well. Therefore, we formulate the first hypothesis as below:

***H1a**: Compared to non-family firms, family firms are more likely to appoint high-quality auditors proxied by Big 5 firms.*

3.3 Family Firms and Audit Fees

Similar prior studies, we examine the relationship between family control characteristics and audit fees in term of the demand-side perspective, supply-side perspective as well as signaling hypothesis.

3.3.1 The Demand-side Perspective

As discussed earlier, both the alignment effects and the entrenchment effects on family firms suggest lower demand for high-quality external audit services. More specifically, because of less information asymmetry for owners and the potential opaqueness demand in financial reporting to conceal their entrenchment, family firm owners may have lower demand for extensive and high-quality external audit services proxied by the audit fee.

3.3.2 The Signaling Hypothesis Perspective

Similarly, Signaling Hypothesis argues that family owners may signal high-level corporate governance to external stakeholders by adopting more rigorous external audit, which predictably would result in higher audit fees.

3.3.3 The Supply-side Perspective

The supply-side perspective suggests a complicated effect. Auditors will consider the agency problems of the firms when pricing their audit fee (Fan & Wong, 2005). Family firms may either alleviate or aggravate agency problems depending on the net effect of Type I and Type II agency problem. The closer monitoring and family reputation concerns and the alignment effects reduce the overall assessed audit risk regarding the material misstatements in financial reporting. In turn, the auditor shall deploy less audit effort to mitigate their audit risks, and thus charge lower audit fees. However, auditors may evaluate a higher audit risk of fraudulent reporting due to potential expropriation incentives of family owners, i.e. the Type II agency problem (Fan & Wong, 2005; Shleifer & Vishny, 1997). As a result, auditors may expose to higher potential litigation risk for the fraudulent reporting (Khalil *et al.*, 2011).

Overall, due to the mixed effects of these two different agency problems in family firms, the demand-side perspective, supply-side perspective and signaling hypothesis provide alternative predictions on the audit fee relationship.

Nevertheless, prior empirical researches provide similar evidences on the correlation between family firms and audit fees. For example, Ho and Kang (2013) find that U.S. family firms tend to incur lower audit fees. Similarly, of particular relevance to our study, using 134 firm-year observations from 1993-1994, Gul *et al.* (1997) find a negative association between audit fees and family control in HK. However, the evidences of Gul *et al.* (1997) are obsolete and incomplete.

Our perspective is also different with Gul *et al.* (1997) in the following way. Because of using only 2-year observations, Gul *et al.* (1997) cannot use fixed effects model. The fixed-effect panel data model in our study should be more powerful approach to analysis the effect because it controls unobserved firm heterogeneity among firms such as time-invariant differences and company-specific differences. Our results thus should be more robust. On the other hand, we measure that firms are family control when the family can exercise effective control over the firm irrespective of the percentage of ownership which is used as a family control measure in Gul *et al.* (1997).

Given the previous empirical evidence, overall, it is expected that family firms have a tendency to incur lower audit fees. Hence we formulate the hypothesis as below:

H1b*: Compared to non-family firms, family firms incur lower audit fee.*

3.4 Audit Committee Multiple Directorships, Auditor Choice and Audit Fees

Prior studies have found that multiple directorships or called interlock directorates have an impact on auditor choice and audit fees. Davison *et al.* (1984) argue that the multiple directorships are important to the auditor choice. Carcello *et al.* (2002) find a significant positive relationship between the multiple directorships as a measure of expertise and audit fees. It suggests that boards with better expertise proxied by their multiple directorships level will employ higher-quality auditors who in turn will improve the overall corporate governance mechanism. However, Sharma and Iselin (2012) suggest that the independent audit committee members with multiple directorships may be hard to perform their monitoring role effectively. Similarly, Boo and Sharma (2008) argue that directors with multiple directorships will spend less time to perform their board/audit committee's role in any one firm, and consequently they may demand more assurances from the external auditors by requiring more audit work to protect their reputation and as a result, incurring higher audit fees. Meanwhile, compared with directors with a single directorship, Hunton and Rose (2008) document that directors with multiple directorships are not willing to accept auditors' restatement for the previous year due to the adverse effect on their reputation capital. These studies in US generally suggest that directors holding multiple directorships demand for high audit quality auditor and extensive audit work.

However, in terms of emerging markets, Lei and Deng (2013) argue that INEDs with greater reputation, knowledge, or experience might obtain more directorships due to limit qualified independent directors available. Consistent with the quality hypothesis, using the sample from Japan, Miwa and Ramseyer (2000) find that most successful public firms recruit well-known industrialists and technologically sophisticated professionals onto the board, who

always serve on several boards, and induce them to place their own reputations, connections, and expertise behind the firm to align managerial and investor incentives. In India, Sarkar and Sarkar (2009) find that INEDs with Multiple directorships make contributions to the company through their personal networks, skills, or other resources, hence increasing firm performance. In this regard, audit risk would be perceived as lower by auditors due to the effective monitoring quality of the INEDs, then offer lower audit fees. Consistent with Lei and Deng (2013), given the similarities of Asian emerging markets, we expect that the Quality Hypothesis should also dominate in predicting the impact of Multiple Directorships on audit fees in HK.

Overall, it is expected that the firms with higher multiple directorship level among the independent members would like to appoint quality auditor proxied by Big 5 firms but the firms incur lower audit fees due to quality monitoring by those INEDs to the firms. Hence, we hypothesize that:

H2a: *The firms with higher average multiple directorships level among independent audit committee members are more likely to appoint Big 5 Firms.*

H2b: *The firms with higher average multiple directorship level among independent audit committee members incur lower audit fees.*

4. Data, Methodology and Model

4.1 Data Sources and Sample Selection

The original sample is firms listed on the HK main board for the period 2001-2009 with financial data available on the *Datastream* International. The family control and family ownership, the corporate governance and auditing-related data will be collected by hand from annual reports and public announcements, which are available on the HKEx website (Note 1). The INED directorships information is hand-collected from Webb-site.com (Note 2).

We exclude the observations without audit committee information or no audit committee in early years from the sample. Then we also exclude the regulated utilities and financial firms because there are subject to more regulatory constraints compared with other industries. Finally, we obtained 2,724 firm-year observations for the period 2001-2009. The sample selection is summarized in Table 1.

Table 1. Sample Description

Description	Period 2001-2009
Number of firm-year observations with relevant financial data available in *Datastream*	3,154
Less: Observations without audit committee information or did not set up an audit committee	(304)
Financial and regulated utilities firms	(126)
Final firm-year observations	2,724

Table 2 summarizes the industry distribution and family firm composition for the sample over the nine years spanning the period 2001-2009 across the different industry categories. On average, 43.39% of the firms are classified as family firms.

Table 2. Industry distribution of sample firms

This table shows the distribution of firms in our sample by industry and family firms' composition. The sample spreads over the nine years spanning the period from 2001 to 2009 across the 32 different industry categories. On average, 43.39% of the firms are categorized as family-controlled firms.

	Year													
Industry	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**Non-Family**	**Family**	**Total**	**%**	**Proportion of family firm**
Aerospace & Defense	1	1	1	1	1	1	1	1	1	9	0	9	0.33%	0.00%
Alternative Energy	1	1	1	1	0	0	0	0	0	4	0	4	0.15%	0.00%
Automobiles & Parts	3	3	2	3	2	3	3	3	3	16	9	25	0.92%	36.00%
Beverages	3	2	2	4	4	4	5	5	6	24	11	35	1.28%	31.43%
Chemicals	3	3	4	3	5	7	5	7	10	39	8	47	1.73%	17.02%
Construction & Material	3	10	8	14	15	17	17	17	17	56	62	118	4.33%	52.54%
Electronic & Electric	6	10	13	22	23	24	24	25	26	94	79	173	6.35%	45.66%
Fixed Line Telecommunication	2	2	2	2	1	1	1	1	1	9	4	13	0.48%	30.77%
Food & Drug Retailers	0	0	0	0	0	0	1	1	1	0	3	3	0.11%	100.00%
Food Producers	4	6	6	6	8	8	8	9	9	30	34	64	2.35%	53.13%
Forestry & Paper	0	0	1	1	2	1	2	2	3	6	6	12	0.44%	50.00%
Gas, Water & Multi-utility Related	2	3	5	6	6	6	6	7	5	42	4	46	1.69%	8.70%
General Industrials	7	11	12	18	17	16	16	16	16	78	51	129	4.74%	39.53%
General Retailers	8	7	7	12	12	13	15	15	15	46	58	104	3.82%	55.77%
Health Care Equipment	0	1	2	4	4	4	4	4	3	19	7	26	0.95%	26.92%
Household Goods & Home Construction	6	9	11	13	14	14	14	14	15	61	49	110	4.04%	44.55%
Industrial Engineering	3	5	5	9	9	9	10	9	9	14	54	68	2.50%	79.41%
Industrial Metals & Minerals	4	7	7	8	7	8	8	9	9	52	15	67	2.46%	22.39%
Industrial Transportation	6	6	7	8	9	11	11	11	13	64	18	82	3.01%	21.95%
Leisure Goods	7	8	9	13	13	14	15	15	18	43	69	112	4.11%	61.61%
Media	4	7	8	11	12	13	17	18	19	61	48	109	4.00%	44.04%
Mining	2	2	2	4	5	7	8	7	8	38	7	45	1.65%	15.56%
Mobile Telecommunication	1	1	2	3	4	4	4	4	5	24	4	28	1.03%	14.29%
Oil & Gas Producers	2	2	2	2	2	2	2	3	3	20	0	20	0.73%	0.00%
Oil Equipment & Service	3	2	1	4	5	5	5	5	4	32	2	34	1.25%	5.88%
Personal Goods	8	15	17	24	27	32	35	37	37	97	135	232	8.52%	58.19%
Pharmaceuticals & Biotechnology	0	1	2	7	5	5	5	7	6	34	4	38	1.40%	10.53%
Real Estate Investment	26	35	39	52	52	58	65	66	70	221	242	463	17.00%	52.27%
Software & Computer Science	3	5	4	10	7	8	9	9	9	57	7	64	2.35%	10.94%
Support Services	1	2	7	10	10	9	9	11	11	47	23	70	2.57%	32.86%
Technology Hardware & Equipment	6	11	13	16	14	16	17	19	18	106	24	130	4.77%	18.46%
Travel & Leisure	14	18	23	29	28	30	33	34	35	99	145	244	8.96%	59.43%
Total	139	196	225	320	323	350	375	391	405	1542	1182	2,724	100.00%	43.39%

Note: The industry based on the "Hong Kong Standard Industrial Classification Version 1.1 by the Census and Statistics Department, HKSAR" which available on "http://www.statistics.gov.hk/pub/B2XX0017.pdf"

4.2 Measuring Family Ownership and Control

Consistent with Setia-Atmaja *et al.* (2009), we use two different ways to measure the impact of family firms: (1) family control (*FAMCTRL*) which is a dichotomous variable equaling one for family controlled firms and 0 otherwise and; (2) family ownership (*FAMOWN*) which is the percentage of family shareholding. The variable FAMCTRL captures the impact of family control, while FAMOWN addresses the impact of different levels of family holdings.

There is no universal accepted measure or criterion for identifying a family control. We definite the firm is family-controlled when the family has significant influence on the firm. Under paragraph 6 of International Accounting Standard 28 (IAS 28), "if an investor holds at least 20 percent of the voting power of an investee, the investor is presumed to have significant influence". Consistent with this notion, a number of previous studies use a 20% ownership cut off point to identify family firms (e.g. La Porta *et al.*, 1999; Setia-Atmaja *et al.*, 2009; Villalonga & Amit, 2006). However, paragraph 7 of IAS 28 also stipulated that board of directors' representation is as alternative evidence of significant influence. We argue that it may be another good alternative proxy to measure the substantive control of family over the board. Therefore, consistent with Jaggi *et al.* (2009), we define the family-controlled firms are the firms when two (2) or more controlling family members are appointed as directors, which implied that the corresponding family has significant influence over the decisions of the board in substance.

4.3 Model and Variable Measurement

In this study, we utilize the panel data modelling technique to "controlling for individual heterogeneity" including the year and the firm-specific effects (Baltagi, 2005). The followings are the models used in this study.

Auditor choice Model

To test ***H1a*** & ***H2a***, we use following Panel Data random-effect Probit Model for auditor choice. Audit quality is very difficult to observe, this study uses the size or reputation of the audit firm to proxy for audit quality following DeAngelo (1981). It is perceived that Big N auditors have these two characteristics, and therefore we use Big N auditors as a proxy for high quality auditors

$$\begin{aligned} BIG5 = {} & \alpha_0 + \alpha_1 FAM + \alpha_2 PINED + \alpha_3 CEODUALITY + \alpha_4 LOGBDSIZE + \\ & \alpha_5 LOGACSIZE + \alpha_6 PINAC + \alpha_7 PACAFE + \alpha_8 ACMD + \alpha_9 LOGASSET + \\ & \alpha_{10} NSUB + \alpha_{11} REV + \alpha_{12} DERATIO + \alpha_{13} LOSS + \alpha_{15} NEGCFO + \\ & \alpha_{16} LAGQDOPIN + \alpha_{17} ADR + \varepsilon \end{aligned} \qquad \textbf{(a)}$$

Where

BIG5 = Dichotomous variable equaling 1 if the auditor is a Big 5 auditor and zero otherwise;

FAM = (1) Family control (FAMCTRL): Dichotomous variable equaling 1 if the firm is classified as a family firm, and 0 otherwise; or
(2) Family ownership (FAMOWN): The percentage of shareholding of the

family;

PINED	=	Proportion of independent directors on the board;
CEODUALITY	=	Dichotomous variable equaling 1 if the CEO is also chairman of the board, and 0 otherwise;
LOGBDSIZE	=	Natural logarithm of the board size;
LOGACSIZE	=	Natural logarithm of the audit committee size;
PINAC	=	Proportion of independent directors on the audit committee;
PACAFE	=	Proportion of independent directors with "accounting and finance expertise" among the independent audit committee members;
ACMD	=	Average directorships level among independent audit committee members;
LOGASSET	=	Natural logarithm of total asset;
NSUB	=	Number of principal subsidiaries of the firm;
REV	=	Sales scaled by total assets t-1;
DERATIO	=	Debt to equity ratio;
LOSS	=	Dichotomous variable equaling 1 if the net income for the year t is negative, and 0 otherwise;
NEGCFO	=	Dichotomous variable equaling 1 if Cash Flow from Operations is negative, and 0 otherwise;
LAGQDOPIN	=	Dichotomous variable equaling 1 if qualified or disclaimer audit opinion in the preceding year, and 0 otherwise;
ADR	=	Dichotomous variable equaling 1 if the firm has ADR trading in the U.S., and 0 otherwise;
ε	=	Error term

Audit Fee model

We develop a model mainly referring to the models documented in some prior Hong Kong studies (DeFond *et al.*, 2000; Firth & Lau, 2004; Gul & Ho, 2008; Gul & Tsui, 1998; S. W. M. Ho & Ng, 1996) and complemented with other non Hong Kong studies. However, those studies investigated the period prior the HK corporate governance reform in 2003. In light of the dramatically changing corporate governance practice after the financial crisis of 1997-1998 and US Enron scandal in 2001, these studies seem to be obsolete. Because audit committee has a major role to determine and approve the audit fees, audit committee characteristic variables which were also not included in those studies. Hence we extend the prior studies in HK by further examining the effect of a family control/ownership on audit fees with further incorporating corporate governance variable, especially audit committee characteristics along the timeline from 2001 to 2009 and also with relatively larger sample size.

To test ***H1b*** & ***H2b***, we use the following Panel Data Fixed Effect (Note 3) Regression Model to examine the relationship between family control and the audit fee.

$$LOGAFEE = \beta_0 + \beta_1 FAM + \beta_2 PINED + \beta_3 CEODUALITY + \beta_4 LOGBDSIZE + \beta_5 LOGACSIZE + \beta_6 PINAC + \beta_7 PACAFE + \beta_8 ACMD + \beta_9 LOGASSET + \beta_{10} LOGREC + \beta_{11} REV + \beta_{12} DERATIO + \beta_{13} ROA + \beta_{14} ADR + \beta_{15} NSUB + \beta_{16} BIG5 + \beta_{17} LAGQDOPIN + \beta_{18} DELAY + \beta_{19} MONTH + \varepsilon \quad \textbf{(b)}$$

Where

LOGAFEE = Natural logarithm of audit Fees;
LOGREC = Natural logarithm of receivable(net) scaled by total assets t-1;
ROA = Return on asset ratio;
DELAY = Dichotomous variable equaling 1 if delay in releasing annual report;
MONTH = Dichotomous variable equaling 1 if the financial year-end in Dec, Jan, Feb & Mar (peak season), and 0 otherwise;

and all other variables are as defined earlier.

To control for heteroscedasticity and skewness, we have also performed a logarithmic transformation on the certain variables, namely audit fees, board size, audit committee size, assets and Receivable (net). Then, we also winsorize the upper and lower 1% of following variable to control for outliers, namely *LOGAFEE*, *FAMOWN*, *LOGACSIZE*, *PINAC*, *PACAFE*, *LOGASSET*, *LOGREC*, *REV*, *DERATIO*, *ROA*, *NSUB.*

Explanatory variables

As discussion above, to test the hypotheses of the study, we include two measures for family firm: (1) a dummy variable *FAMCTRL*, which equals one if the firm is classified as a family firm and (2) *FAMOWN* which is the percentage of shares held by the family as a group in both regression models

In order to support H1*a* where *family firms are more likely to appoint high quality auditors proxied by Big 5 firms*, we expect the sign of the coefficient on FAMCTRL and FAMOWN are positive in the auditor choice regression. H1*b* predict that family firms incur lower audit fee. Therefore, we expect the negative coefficient on FAMCTRL and FAMOWN in the auditor fee regression model. H2*a* & H2*b* make prediction the firm with higher multiple directorships level for independent audit committee member (*ACMD*) are more likely to use Big5 firms incur lower audit fee, therefore we expect positive coefficient in auditor choice model but negative coefficient audit fee model.

Control variables

Consistent with prior studies, we expect that client firm size, complexity, and risk will influence auditor choices and audit fees (e.g. Carcello *et al.*, 2002; Gul *et al.*, 2003; Hay, Knechel, & Wong, 2006; S. W. M. Ho & Ng, 1996; Lin & Liu, 2009). We proxy firm size by the natural logarithm of total assets (*LOGASSET*), control for firm complexity by natural logarithm of receivable (*LOGREC*), the number of subsidiaries (*NSUB*) and control for profitability by revenue (*REV*). We also control for firm risk by return on assets (*ROA*), Debt to Equity Ratio (*DERATIO*), loss (*LOSS*) and negative cash flow from operation (*NEGCFO*). Other control variables that capture firms' board characteristics include board independence (PINED), CEO duality (*CEODUALITY*), audit committee characteristics includes the size of the audit committee (*ACSIZE*), audit committee independence (*PINAC*), the percentage of independent Audit committee members have accounting and financial expertise (*PACAFE*). ADR trading in U.S. (*ADR*), Peak season (*MONTH*), qualified or disclaimer audit opinion in the preceding year (*LAGQDOPIN*), the delay in releasing annual report and (*DELAY*) is also included in the regressions.

5. Empirical Results

5.1 Descriptive Statistics and Univariate Test

Table 3 provides descriptive statistics of the variables in the full sample (Panel A) and split sample of family and non-family firms (Panel B). As seen in Panel A, the descriptive statistics show that family firms are common in the Hong Kong capital market. Among the sample firms, family firms represent around 43% of the full sample.

Further, Big 5 audit firms show their dominant position in the Hong Kong audit market as 78.3% of the 2,724 firm-year observations being audited by them. The average audit fee of the sample is HKD 4.07 million. The average size of the audit committee (*NUMOFACMEMBER*) is 3.09 and 93.2% of the audit committee members are INEDs. Among the independent audit committee members, 40% have accounting or financial expertise. On average, the multiple directorship level among the independent audit committee members (*ACMD*) is 3.29, suggesting that the busyness level is still not very serious.

Further, we also conduct *t*-tests of differences in research variables between family firms and non-family firms. Panel B of Table 3 presents difference of means tests for the variables between family and non-family firms. On average, family firms pay a lower audit fees than those of non-family firms ($p<0.001$). 79.8% of family firms and 77.2% of non-family firms choose Big 5 auditors, but the difference is not quite significant ($p=0.1104$). Family firms are more likely to have CEO duality, have lower board size, audit committee size as well as lower audit committee independence level, but they are less likely to have qualified and disclaimer opinions in the preceding year, all the differences are statistically significant. Meanwhile, family firms appear to have lower average multiple directorship level among independent audit committee members than those in non-family firms. However, this difference is statistically insignificant ($p=0.1527$).

Table 3. Descriptive statistics

Panel A provides summary statistics of auditor choice, audit fees, family control/ownership, multiple directorships and other control variables in the full sample, and Panel B provides the Difference Of means Tests between family firms and non-family firm. *LOGAFEE*, *FAMOWN*, *LOGACSIZE*, *PINAC*, *PACAFE*, *LOGASSET*, *LOGREC*, *REV*, *DERATIO*, *ROA* and *NSUB* are winsorized at the 1st and 99th percentiles to control for outliner.

Panel A: Descriptive statistics for the full sample (N=2,724)

Variable	N	Mean	Std. Dev	Min	Median	Max
BIG5	2,724	0.783	0.412	0.000	1.000	1.000
LOGAFEE	2,724	7.460	1.020	4.580	7.390	10.500
AUDITFEE(HKD'000)	2,724	4,067.000	15,134.000	24.000	1615.000	300,000.000
FAMCTRL	2,724	0.434	0.496	0.000	0.000	1.000
FAMOWN	2,724	0.204	0.260	0.000	0.000	0.900
PINED	2,724	0.364	0.115	0.077	0.333	1.000
CEODUALITY	2,724	0.406	0.491	0.000	0.000	1.000
LOGBDSIZE	2,724	2.160	0.312	1.390	2.200	2.940
NUMOFACMEMBER	2,724	3.090	0.693	1.000	3.000	7.000
LOGACSIZE	2,724	1.100	0.218	0.690	1.100	1.610
PINAC	2,724	0.932	0.132	0.140	1.000	1.000
PACAFE	2,724	0.400	0.245	0.000	0.330	1.000
ACMD	2,724	3.290	1.830	0.000	3.000	12.000
LOGASSET	2,724	14.500	1.840	9.190	14.400	20.400
NSUB	2,724	26.800	27.600	1.000	18.000	147.000
ROA	2,724	0.009	0.214	-1.720	0.042	0.457
ADR	2,724	0.113	0.316	0.000	0.000	1.000
LOGREC	2,724	-2.360	1.320	-6.830	-2.130	0.088
REV	2,724	0.858	0.940	0.005	0.584	5.570
DERATIO	2,724	0.197	0.181	0.000	0.160	0.949
LOSS	2,724	0.276	0.447	0.000	0.000	1.000
NEGCFO	2,724	0.294	0.456	0.000	0.000	1.000
LAGQDOPIN	2,724	0.042	0.199	0.000	0.000	1.000
DELAY	2,724	0.012	0.108	0.000	0.000	1.000
MONTH	2,724	0.883	0.322	0.000	1.000	1.000

Table 3 Descriptive statistics (cont'd)

Panel B: Difference of Means tests (Non-Family firm: FAMCTRL=0 and Family firm: FAMCTRL=1

	Non-Family (N=1,542)		Family (N=1,182)			
	Mean1	**Std. Dev.**	**Mean2**	**Std. Dev.**	**Differences in Means**	***p-value***
BIG5	0.772	0.419	0.798	0.402	0.025	0.1104
LOGAFEE	7.524	1.026	7.379	0.999	-0.145	0.0002
AUDITFEE('000)	3,900	10,000	4,300	20,000	400.000	0.5561
FAMCTRL	-	-	1.000	0.000	-	-
FAMOWN	-	-	0.468	0.173	-	-
PINED	0.368	0.119	0.360	0.110	-0.007	0.1062
CEODUALITY	0.382	0.486	0.438	0.496	0.056	0.0030
LOGBDSIZE	2.169	0.312	2.147	0.312	-0.022	0.0666
LOGACSIZE	1.113	0.207	1.095	0.231	-0.018	0.0344
PINAC	0.946	0.119	0.914	0.145	-0.032	0.0000
PACAFE	0.418	0.245	0.377	0.242	-0.041	0.0000
ACMD	3.246	1.810	3.347	1.861	0.101	0.1527
LOGASSET	14.550	1.933	14.475	1.712	-0.075	0.2948
NSUB	22.503	23.288	32.316	31.567	9.813	0.0000
ROA	-0.010	0.249	0.033	0.155	0.043	0.0000
ADR	0.109	0.312	0.118	0.322	0.009	0.4795
LOGREC	-2.279	1.287	-2.461	1.349	-0.182	0.0003
REV	0.885	0.996	0.822	0.860	-0.063	0.0831
DERATIO	0.205	0.190	0.186	0.167	-0.018	0.0092
LOSS	0.317	0.466	0.222	0.416	-0.095	0.0000
NEGCFO	0.319	0.466	0.262	0.440	-0.057	0.0013
LAGQDOPIN	0.058	0.235	0.020	0.138	-0.039	0.0000
DELAY	0.018	0.131	0.004	0.065	-0.013	0.0014
MONTH	0.900	0.301	0.860	0.347	-0.039	0.0017

5.2 Correlation Analysis

Table 4 displays the Pearson correlation matrix of the variables. The likelihood of appointing Big 5 audit firms (*BIG5*) is positively correlated with both *FAMCTRL* and *FAMOWN* (measures of family control and ownership respectively) but only significant for *FAMOWN*, suggesting preliminary support for ***H1a***. Audit fees (*LOGAFEE*) has negative and significant association with both *FAMCTRL* and *FAMOWN*, again suggesting preliminary support for ***H1b***. *ACMD* is significantly and positively correlated with both *BIG5* and *LOGAFEE*, also providing preliminary support for ***H2a*** but not support for ***H2b***.

Although some correlation coefficients are mildly significant, the variance inflation factors (VIFs) of each variable are relatively low (Note 4), range from 1.05 to 4.37 only and Mean of VIFs is 1.66, overall suggesting the *low* multicollinearity problem.

Table 4. Pearson correlations of variables

This table displays correlations of variables. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed).

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1)	*BIG5*	1.000											
(2)	*LOGAFEE*	0.383***	1.000										
(3)	*AUDITFEE*	0.100***	0.445***	1.000									
(4)	*FAMCTRL*	0.031	-0.071***	0.011	1.000								
(5)	*FAMOWN*	0.064***	-0.053***	0.018	0.898***	1.000							
(6)	*PINED*	-0.176***	-0.157***	-0.008	-0.031	-0.010	1.000						
(7)	*CEODUALITY*	-0.064***	-0.073***	-0.021	0.057***	0.082***	0.042**	1.000					
(8)	*LOGBDSIZE*	0.215***	0.469***	0.215***	-0.035*	-0.046**	-0.641***	-0.186***	1.000				
(9)	*LOGACSIZE*	0.015	0.256***	0.071***	-0.041**	-0.025	0.163***	-0.170***	0.236***	1.000			
(10)	*PINAC*	-0.120***	-0.140***	-0.117***	-0.120***	-0.120***	0.151***	0.069***	-0.243***	-0.390***	1.000		
(11)	*PACAFE*	-0.045**	-0.082***	-0.040**	-0.083***	-0.095***	0.072***	-0.069***	-0.088***	-0.082***	0.212***	1.000	
(12)	*ACMD*	0.202***	0.156***	0.050***	0.027	0.043**	-0.235***	-0.017	0.200***	-0.021	-0.119***	-0.020	1.000
(13)	*LOGASSET*	0.336***	0.793***	0.400***	-0.020	0.008	-0.206***	-0.067***	0.525***	0.249***	-0.190***	-0.126***	0.205***
(14)	*NSUB*	0.179***	0.489***	0.265***	0.176***	0.182***	-0.127***	-0.039**	0.268***	0.077***	-0.143***	-0.093***	0.156***
(15)	*ROA*	0.185***	0.233***	0.068***	0.099***	0.111***	-0.044**	-0.003	0.129***	0.100***	-0.069***	-0.028	0.073***
(16)	*ADR*	0.103***	0.362***	0.312***	0.014	-0.008	-0.103***	0.048**	0.264***	0.021	-0.101***	-0.082***	0.065**
(17)	*LOGREC*	-0.032*	0.013	-0.043**	-0.069***	-0.099***	0.051***	0.023	-0.111***	-0.051***	0.114***	0.034*	-0.115***
(18)	*REV*	0.015	0.017	-0.026	-0.033*	-0.063***	0.062***	0.047**	-0.121***	-0.007	0.088***	0.058***	-0.109***
(19)	*DERATIO*	-0.026	0.113***	0.071***	-0.050***	-0.043**	-0.022	0.001	0.019	-0.045**	0.011	-0.048**	0.010
(20)	*LOSS*	-0.218***	-0.266***	-0.088***	-0.106***	-0.119***	0.122***	0.028	-0.223***	-0.125***	0.126***	0.040**	-0.107***
(21)	*NEGCFO*	-0.184***	-0.224***	-0.077***	-0.062***	-0.072***	0.052***	0.026	-0.128***	-0.079***	0.093***	0.025	-0.064***
(22)	*LAGQDOPIN*	-0.235***	-0.140***	-0.039**	-0.097***	-0.095***	0.019	0.019	-0.075***	-0.076***	0.066***	0.040**	-0.055***
(23)	*DELAY*	-0.100***	0.017	-0.001	-0.061***	-0.064***	0.025	0.021	0.004	-0.027	0.056***	-0.039**	-0.059***
(24)	*MONTH*	0.043**	0.022	0.012	-0.060***	-0.088***	-0.047**	-0.051***	0.003	-0.042**	0.074***	0.095***	-0.018

Table 4. Pearson correlations of variables (Cont'd)

This table displays correlations of variables. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively (two-tailed).

		(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(13)	*LOGASSET*	1.000											
(14)	*NSUB*	0.528***	1.000										
(15)	*ROA*	0.338***	0.101***	1.000									
(16)	*ADR*	0.368***	0.227***	0.075***	1.000								
(17)	*LOGREC*	-0.194***	-0.030	0.066***	-0.027	1.000							
(18)	*REV*	-0.160***	-0.100***	0.116***	-0.045***	0.512***	1.000						
(19)	*DERATIO*	0.100***	0.108***	-0.151***	0.048***	0.017	-0.031	1.000					
(20)	*LOSS*	-0.383***	-0.168***	-0.567***	-0.119***	-0.028	-0.101***	0.143***	1.000				
(21)	*NEGCFO*	-0.260***	-0.070***	-0.317***	-0.098***	0.048**	-0.055***	0.178***	0.371***	1.000			
(22)	*LAGQDOPIN*	-0.217***	-0.091***	-0.138***	-0.062***	0.056***	-0.003	0.144***	0.185***	0.160***	1.000		
(23)	*DELAY*	-0.014	-0.016	-0.063***	0.007	0.032*	-0.008	0.042**	0.070***	0.012	0.114**	1.000	
(24)	*MONTH*	-0.037*	-0.108***	-0.013	-0.032*	-0.038**	0.027	-0.007	0.016	-0.019	-0.004	-0.045**	1.000

5.3 Regression Results for Auditor Choice

Table 5 presents the Probit regression results to test ***H1a*** and ***H2a***. We examine the impact of family control and family ownership in the regression model (1) and (2) of Table 5 respectively. As discussed earlier, two variables, *FAMCTRL* and *FAMOWN*, which capture the influence of family firms' characteristics on auditor choice. The table displays that the coefficients of BIG5 are positively significant at the 1 percent level on both *FAMCTRL* (0.624, *p=0.009*) and *FAMOWN* (1.499, *p=0.001*) model, implying that family firms are higher likely to hire Big 5 auditors and hence, this finding supports ***H1a***. In other words, consistent with the signaling theory, this finding may imply that listed family firms in HK are aware of the concerns of the Type II agency problem. Accordingly, they employ stronger external mechanisms such as appointing high-quality auditors to convince minority shareholders, even more, other stakeholders about their sound corporate governance practice in place and the credibility of financial reporting.

Meanwhile, we also find that significant and positive coefficients on the *ACMD* (both are 0.218, *p=0.000)* in the regression model, which supports the hypothesis ***H2a*** that firms with higher average multiple directorships level among independent audit committee members are more likely to engage Big 5 auditor.

The effectiveness of auditor choice model was examined by using the likelihood ratio test. The likelihood ratio chi-square are 220.03 and 224.31 in the two family measures models respectively (p<0.000) which indicate that as a whole our auditor choice model is statistically significant. In other words, it fits significantly better than a model with no independent variable.

Table 5. Random-Effect Probit Regression Model for Auditor Choice

This table presents the random-effect panel data probit regression results of Model (a) to test *H1a* and *H2a*. The dependent variables are Dichotomous variable equaling 1 if the auditor is a Big 5 auditor and zero otherwise. The key independent variables are the two family firm measures, i.e. FAMCTRL and FAMOWN as well as ACMD. Control variables include firm characteristics and corporate-governance attributes and audit opinion in the last year. *, **, *** and **** represent 10%, 5%, 1% and 0.1% significance levels, respectively.

		(1)		(2)	
VARIABLES	*Expected Sign*	*Coeff.*	*p-value*	*Coeff.*	*p-value*
FAMCTRL	+	0.624***	(0.009)		
FAMOWN	+			1.499****	(0.001)
PINED	+/-	-5.676****	(0.000)	-5.633****	(0.000)
CEODUALITY	+/-	0.278	(0.142)	0.262	(0.166)
LOGBDSIZE	+/-	-0.626	(0.160)	-0.630	(0.158)
LOGACSIZE	+/-	-2.548****	(0.000)	-2.480****	(0.000)
PINAC	+/-	-1.809**	(0.035)	-1.780**	(0.038)
PACAFE	+/-	-0.800**	(0.043)	-0.782**	(0.048)
ACMD	+	0.218****	(0.000)	0.218****	(0.000)
LOGASSET	+	0.370****	(0.000)	0.386****	(0.000)
NSUB	+	0.001	(0.825)	0.001	(0.829)
REV	+	0.401****	(0.000)	0.402****	(0.000)
ADR	+	-0.390	(0.299)	-0.377	(0.314)
DERATIO	+/-	-0.014	(0.975)	-0.071	(0.875)
LOSS	+	-0.205	(0.197)	-0.199	(0.210)
NEGCFO	+/-	-0.192	(0.212)	-0.196	(0.201)
LAGQDOPIN	-	-1.683****	(0.000)	-1.697****	(0.000)
Intercept	?	5.644***	(0.001)	5.183***	(0.003)
N		2 724		2 724	
Pseudo R^2		0.144		0.146	
LR chi^2		220.030	(0.000)	224.310	(0.000)

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

5.4 Regression Results for Audit Fees

Table 6 Panel A is the regression results to test ***H1b*** and ***H2b*** with the full sample. We find significant and negative coefficients on both family firm measures namely *FAMCTRL* (-0.081, *p=0.008*) and *FAMOWN* (-0.134, *p=0.021*), which supported the hypothesis ***H1b*** that family firms incur lower audit fee. As we find the evidences that family firms tend to select Big 5 auditors in the last section, the lower audit fee supports the supply-side theory that the closer monitoring and family reputation concern reduce the overall assessed audit risk of material misstatements in financial reporting. The auditors may in turn deploy less audit work to mitigate their audit risks, hence offer lower audit fees.

Meanwhile, we find a negative and significant coefficient on the *ACMD* (both are -0.014, *p=0.030*) indicating that higher multiple directorships level among independent audit committee members incurs low audit fee which is consistent with ***H2b*** predicts. This finding supports the argument that multiple directorships imply better quality of directors (quality hypothesis) and busyness of these directors is still less prevalent in Hong Kong, so that multiple directorships would still not harm the firms in Hong Kong (see Lei and Deng, 2013). But, the multiple directorships signal the expertise and monitoring competence over financial reporting, hence lower the audit risk and consequently lower the firm's audit fee.

Overall, the adjusted R^2 is 30.6% in both models for family measures indicates that the 30.6% of deviation in the model can be explained by the regression on independence variables.

In Table 6 Panel B, we further examine whether the relationship is different between Big 5 sub-sample and non-Big 5 sub-sample. Our results also show a significant and negative relationship between family control/ownership and audit fees for both Big 5 sub-sample and non-Big 5 sub-sample. In other words, it also supports the ***H1b*** again that by engaging same tier audit firms, family firms generally incur lower level of audit fees than those in non-family firms.

Table 6. Fixed-Effect Linear Regression Model for Audit Fees

This table displays the fixed-effect panel data linear regression results of Model (b) to test *H1b* and *H2b*. We use the full sample in Panel A and split sample of the firms using Big 5 or Non-Big 5 Auditors in Panel B. The dependent variables are Natural logarithm of Audit Fees. The key independent variables include the two family firm measures, i.e. FAMCTRL and FAMOWN as well as ACMD. Control variables include firm characteristics and corporate-governance attributes and auditing attributes. *, **, *** and **** represent 10%, 5%, 1% and 0.1% significance levels, respectively.

Panel A: Full sample

		(1)		(2)	
VARIABLES	*Expected Sign*	*Coeff.*	*p-value*	*Coeff.*	*p-value*
FAMCTRL	-	-0.081***	(0.008)		
FAMOWN	-			-0.134**	(0.021)
PINED	+/-	0.300**	(0.015)	0.314**	(0.011)
CEODUALITY	+/-	-0.060***	(0.004)	-0.059***	(0.006)
LOGBDSIZE	+/-	0.160***	(0.005)	0.160***	(0.005)
LOGACSIZE	+/-	0.195****	(0.000)	0.193****	(0.000)
PINAC	+/-	-0.016	(0.884)	-0.013	(0.909)
PACAFE	+/-	0.096**	(0.050)	0.097**	(0.047)
ACMD	-	-0.014**	(0.030)	-0.014**	(0.030)
LOGASSET	+	0.367****	(0.000)	0.366****	(0.000)
LOGREC	+	0.026***	(0.005)	0.026***	(0.005)
REV	+/-	-0.010	(0.450)	-0.011	(0.424)
DERATIO	+/-	-0.038	(0.498)	-0.039	(0.492)
ROA	+	-0.198****	(0.000)	-0.198****	(0.000)
ADR	+	-0.071	(0.141)	-0.071	(0.143)
NSUB	+	0.008****	(0.000)	0.008****	(0.000)
BIG5	+	0.246****	(0.000)	0.246****	(0.000)
LAGQDOPIN	+	0.111**	(0.012)	0.112**	(0.011)
DELAY	+	0.277****	(0.000)	0.279****	(0.000)
MONTH	+	-0.122	(0.137)	-0.129	(0.117)
Intercept	?	1.338****	(0.000)	1.334****	(0.000)
N		2 724		2 724	
R^2		0.432		0.432	
adj. R^2		0.306		0.306	
F		89.336	(0.000)	89.189	(0.000)

Robust standard errors

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

Table 6. Fixed-Effect Linear Regression Model for Audit Fees (cont'd)

Panel B: Split sample of the firms using Big 5 or Non-Big 5 Auditors

	Expected	Big5		Non-Big5	
VARIABLES	*Sign*	(1)	(2)	(3)	(4)
FAMCTRL	-	-0.096***		-0.229***	
		(0.005)		(0.008)	
FAMOWN	-		-0.155**		-0.361*
			(0.014)		(0.052)
PINED	+/-	0.219	0.235*	0.430	0.514
		(0.113)	(0.088)	(0.183)	(0.109)
CEODUALITY	+/-	-0.070***	-0.067***	-0.063	-0.072
		(0.003)	(0.004)	(0.239)	(0.183)
LOGBDSIZE	+/-	0.129*	0.125*	0.189	0.200
		(0.051)	(0.058)	(0.182)	(0.159)
LOGACSIZE	+/-	0.185****	0.184****	-0.116	-0.124
		(0.001)	(0.001)	(0.418)	(0.387)
PINAC	+/-	0.014	0.016	-0.159	-0.154
		(0.909)	(0.892)	(0.671)	(0.683)
PACAFE	+/-	0.085	0.088	0.249**	0.262**
		(0.131)	(0.115)	(0.040)	(0.031)
ACMD	-	-0.013*	-0.013*	-0.011	-0.009
		(0.076)	(0.074)	(0.581)	(0.659)
LOGASSET	+	0.438****	0.437****	0.257****	0.258****
		(0.000)	(0.000)	(0.000)	(0.000)
LOGREC	+	0.033***	0.033***	-0.006	-0.007
		(0.005)	(0.005)	(0.758)	(0.717)
REV	+/-	-0.055***	-0.056***	0.035	0.034
		(0.002)	(0.002)	(0.134)	(0.152)
DERATIO	+/-	-0.138*	-0.139*	0.079	0.074
		(0.089)	(0.086)	(0.406)	(0.433)
ROA	+	-0.257****	-0.256****	-0.061	-0.066
		(0.000)	(0.000)	(0.304)	(0.268)
ADR	+	-0.055	-0.055	-0.097	-0.096
		(0.285)	(0.286)	(0.498)	(0.508)
NSUB	+	0.007****	0.007****	0.005	0.005
		(0.000)	(0.000)	(0.156)	(0.116)
LAGQDOPIN	+	0.140*	0.141*	0.010	0.013
		(0.058)	(0.056)	(0.878)	(0.835)
DELAY	+	0.183	0.185	0.261***	0.274***
		(0.155)	(0.151)	(0.010)	(0.007)
MONTH	+	-0.123	-0.121	0.245	0.052
		(0.161)	(0.165)	(0.493)	(0.888)
Intercept	?	0.724**	0.726**	2.697****	2.756****
		(0.011)	(0.011)	(0.000)	(0.000)
N		2 134	2 134	590	590
R^2		0.480	0.480	0.292	0.286
adj. R^2		0.354	0.354	-0.010	-0.018
F		88.136	87.949	9.455	9.192

Robust standard errors

$p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

6. Robustness Tests and Additional Tests

6.1 Robustness Tests with Sub-sample 2004-2009

As discussed earlier, in 2003, there is a major corporate governance reform undertaken in Hong Kong. This may structurally change the auditor choices and audit fees of firms. The improved corporate governance may lower the incentive to signal good corporate governance and financial report. Therefore, we also investigate the effect with the sample from 2004-2009. Table **7** and 8 display the results, and the results are similar to those for using 2001-2009 observations.

Table 1. Radom-Effect Probit Regression Model for Auditor Choice (y:2004-2009)

This table presents the robustness tests results of random-effect panel data Probit regression of Model (a) to test *H1a* and *H2a* with the sample from 2004-2009 which is the period after the major corporate governance reform. The dependent variables are dichotomous variable equaling 1 if the auditor is a Big 5 auditor and zero otherwise. The key independent variables include the two family firm measures, i.e. FAMCTRL and FAMOWN as well as ACMD. Control variables include firm characteristics and corporate-governance attributes and audit opinion in preceding year. *, **, *** and **** represent 10%, 5%, 1% and 0.1% significance levels, respectively.

	Expected	(1)		(2)	
VARIABLES	*Sign*	*Coeff.*	*p-value*	*Coeff.*	*p-value*
FAMCTRL	+	0.606**	(0.018)		
FAMOWN	+			1.514***	(0.002)
PINED	+/-	-6.751****	(0.000)	-6.582****	(0.000)
CEODUALITY	+/-	0.113	(0.599)	0.103	(0.632)
LOGBDSIZE	+/-	-1.428***	(0.006)	-1.376***	(0.009)
LOGACSIZE	+/-	0.460	(0.448)	0.508	(0.404)
PINAC	+/-	-1.736*	(0.087)	-1.625	(0.110)
PACFE	+/-	-0.132	(0.779)	-0.159	(0.735)
ACMD	+	0.153**	(0.029)	0.148**	(0.034)
LOGASSET	+	0.391****	(0.000)	0.399****	(0.000)
NSUB	+	0.001	(0.843)	0.001	(0.900)
REV	+	0.459****	(0.000)	0.459****	(0.000)
ADR	+	-0.296	(0.483)	-0.294	(0.489)
DERATIO	+/-	-0.169	(0.736)	-0.187	(0.710)
LOSS	+	-0.160	(0.377)	-0.156	(0.390)
NEGCFO	+/-	-0.224	(0.193)	-0.222	(0.197)
LAGQDOPIN	-	-1.612****	(0.001)	-1.648****	(0.001)
Intercept	?	3.369*	(0.099)	2.905	(0.156)
N		2 164		2 164	

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

Table 2. Fixed-Effect Regression Model for Audit Fee (y:2004-2009)

This table presents the robustness test results of panel data fixed-effect linear regression of Model (b) to test *H1b* and *H2b* with the sample from 2004-2009, the period after the major corporate governance reform. The dependent variables are Natural logarithm of Audit Fees. The key independent variables include the two family firm measures, i.e. FAMCTRL and FAMOWN as well as ACMD. Control variables include firm characteristics and corporate-governance attributes and auditing attributes. *, **, *** and **** represent 10%, 5%, 1% and 0.1% significance levels, respectively.

	Expected	(1)		(2)	
VARIABLES	*Sign*	*Coeff.*	*p-value*	*Coeff.*	*p-value*
FAMCTRL	-	-0.075**	(0.049)		
FAMOWN	-			-0.121*	(0.091)
PINED	+/-	0.507****	(0.000)	0.516****	(0.000)
CEODUALITY	+/-	-0.083***	(0.002)	-0.083***	(0.002)
LOGBDSIZE	+/-	0.201***	(0.002)	0.199***	(0.002)
LOGACSIZE	+/-	0.133**	(0.049)	0.131*	(0.053)
PINAC	+/-	-0.053	(0.727)	-0.051	(0.734)
PACAFE	+/-	0.163**	(0.013)	0.166**	(0.011)
ACMD	-	-0.024***	(0.006)	-0.024***	(0.005)
LOGASSET	+	0.351****	(0.000)	0.350****	(0.000)
LOGREC	+	0.003	(0.754)	0.003	(0.758)
REV	+/-	-0.019	(0.178)	-0.020	(0.162)
DERATIO	+/-	-0.087	(0.163)	-0.088	(0.155)
ROA	+	-0.198****	(0.000)	-0.199****	(0.000)
ADR	+	-0.058	(0.295)	-0.057	(0.303)
NSUB	+	0.006****	(0.000)	0.006****	(0.000)
BIG5	+	0.251****	(0.000)	0.251****	(0.000)
LAGQDOPIN	+	0.103**	(0.028)	0.105**	(0.026)
DELAY	+	0.227***	(0.003)	0.229***	(0.003)
MONTH	+	-0.058	(0.518)	-0.058	(0.520)
Intercept	?	1.480****	(0.000)	1.481****	(0.000)
N		2 164		2 164	
R^2		0.397		0.397	
adj. R^2		0.224		0.223	
F		58.258	(0.000)	58.170	(0.000)

Robust standard errors

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

6.2 Robustness Tests with Alternative Definitions of the Family Firms

There are varied definitions of family firms for existing studies. These alternative definitions may produce different results. Another common definition is to use a 20% of ownership cut off point (e.g. Villalonga & Amit, 2006) to identify family control firms, because it is argued this level is usually sufficient to get "effective control" for the firm (La Porta *et al.*, 1999). Therefore, we also investigate the effect with this measure (FAMCTRLNEW) and the results remain robust. Table 9 and 10 show these results.

Table 9. Radom-Effect Probit Model for Auditor Choice with alternative definitions of Family Firms

This table presents the robustness test results of random-effect panel data Probit regression for Model (a). It is to test *H1a* and *H2a* with alternative definitions of the family firms (20% of ownership cut off point). The dependent variables are Dichotomous variable equaling 1 if there is a Big 5 auditor and zero otherwise. The key independent variables include the two family firm measures, i.e. FAMCTRL and FAMCTRLNEW (new proxy for family control) as well as ACMD. Control variables include firm characteristics and corporate-governance attributes. *, **, *** and **** represent 10%, 5%, 1% and 0.1% significance levels, respectively.

	Expected	(1)		(2)	
VARIABLES	*Sign*	*Coeff.*	*p-value*	*Coeff.*	*p-value*
FAMCTRL	+	0.624***	(0.009)		
FAMCTRLNEW	+			0.722***	(0.002)
PINED	+/-	-5.676****	(0.000)	-5.590****	(0.000)
CEODUALITY	+/-	0.278	(0.142)	0.261	(0.166)
LOGBDSIZE	+/-	-0.626	(0.160)	-0.627	(0.158)
LOGACSIZE	+/-	-2.548****	(0.000)	-2.518****	(0.000)
PINAC	+/-	-1.809**	(0.035)	-1.790**	(0.036)
PACFE	+/-	-0.800**	(0.043)	-0.775*	(0.050)
ACMD	+	0.218****	(0.000)	0.217****	(0.000)
LOGASSET	+	0.370****	(0.000)	0.375****	(0.000)
NSUB	+	0.001	(0.825)	0.002	(0.793)
REV	+	0.401****	(0.000)	0.394****	(0.000)
ADR	+	-0.390	(0.299)	-0.367	(0.328)
DERATIO	+/-	-0.014	(0.975)	-0.046	(0.918)
LOSS	+	-0.205	(0.197)	-0.205	(0.195)
NEGCFO	+/-	-0.192	(0.212)	-0.205	(0.180)
LAGQDOPIN	-	-1.683****	(0.000)	-1.687****	(0.000)
Intercept	?	5.644***	(0.001)	5.394***	(0.002)
N		2,724		2,724	

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

Table 10. Fixed-Effect Regression Model for Audit Fee with alternative definition of Family Firms

This table presents the robustness test results of fixed-effect panel data linear regression of Model (b). It is to test *H1b* and *H2b* with alternative definitions of the family firms, 20% of ownership cut off point. The dependent variables are Natural logarithm of Audit Fees. The key independent variables include the two family firm measures, i.e. FAMCTRL and FAMOWN as well as ACMD. Control variables include firm characteristics and corporate-governance attributes. *, **, *** and **** represent 10%, 5%, 1% and 0.1% significance levels, respectively.

	Expected	(1)		New proxy	
VARIABLES	*Sign*	*Coeff.*	*p-value*	*Coeff.*	*p-value*
FAMCTRL	-	-0.081***	(0.008)		
FAMCTRLNEW	-			-0.086***	(0.004)
PINED	+/-	0.300**	(0.015)	0.303**	(0.014)
CEODUALITY	+/-	-0.060***	(0.004)	-0.059***	(0.005)
LOGBDSIZE	+/-	0.160***	(0.005)	0.159***	(0.005)
LOGACSIZE	+/-	0.195****	(0.000)	0.193****	(0.000)
PINAC	+/-	-0.016	(0.884)	-0.014	(0.900)
PACAFE	+/-	0.096**	(0.050)	0.095*	(0.053)
ACMD	-	-0.014**	(0.030)	-0.014**	(0.028)
LOGASSET	+	0.367****	(0.000)	0.366****	(0.000)
LOGREC	+	0.026***	(0.005)	0.027***	(0.004)
REV	+/-	-0.010	(0.450)	-0.010	(0.455)
DERATIO	+/-	-0.038	(0.498)	-0.038	(0.507)
ROA	+	-0.198****	(0.000)	-0.200****	(0.000)
ADR	+	-0.071	(0.141)	-0.074	(0.127)
NSUB	+	0.008****	(0.000)	0.008****	(0.000)
BIG5	+	0.246****	(0.000)	0.246****	(0.000)
LAGQDOPIN	+	0.111**	(0.012)	0.111**	(0.012)
DELAY	+	0.277****	(0.000)	0.277****	(0.000)
MONTH	+	-0.122	(0.137)	-0.130	(0.115)
Intercept	?	1.338****	(0.000)	1.355****	(0.000)
N		2,724		2,724	
R^2		0.432		0.433	
adj. R^2		0.306		0.307	
F		89.336	(0.000)	89.445	(0.000)

Robust standard errors

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

6.3 Additional Test – Big Family Firms and Audit Fees

Big family firms would receive greater public concerns and scrutiny due to their size and more outside investors involved than small family firms. Therefore, the auditors for those firms face a great litigation risk from sued by the mass outside investors. On the other hand, the auditing becomes more complicated due to the size of the firms. Collectively, due to the public concern, the big family firms demand more audit work and the auditors would also offer higher fees to compensate the greater litigation risk. Thus, we hypothesize that there is a positive relationship between big family firms and audit fee. We use the model (b) after replacing the FAM by BIGFAMILY which is a dichotomous variable equals to 1 if the firms controlled by recognized Big families in Hong Kong society to test the hypothesis. Table 11 shows that the result supports our hypothesis with positive and significant coefficient (*p=0.073*).

Table 3. Fixed-Effect Linear Regression Model for Audit Fees

This table displays the fixed-effect panel data linear regression results of additional test 2. The dependent variables are Natural logarithm of Audit Fees. The key independent variable is the firms controlled by the Big families. Control variables include firm characteristics and corporate-governance attributes and auditing attributes. *, **, *** and **** represent 10%, 5%, 1% and 0.1% significance levels, respectively.

VARIABLES	*Expected Sign*	*Coeff.*	*p-value*
BIGFAMILY	+	0.635*	(0.073)
PINED	+/-	0.341***	(0.006)
CEODUALITY	+/-	-0.059***	(0.005)
LOGBDSIZE	+/-	0.155***	(0.006)
LOGACSIZE	+/-	0.191****	(0.000)
PINAC	+/-	-0.022	(0.843)
PACAFE	+/-	0.098**	(0.046)
ACMD	-	-0.013**	(0.045)
LOGASSET	+	0.370****	(0.000)
LOGREC	+	0.029***	(0.002)
REV	+/-	-0.013	(0.362)
DERATIO	+/-	-0.047	(0.402)
ROA	+	-0.205****	(0.000)
ADR	+	-0.066	(0.175)
NSUB	+	0.008****	(0.000)
BIG5	+	0.243****	(0.000)
LAGQDOPIN	+	0.111**	(0.013)
DELAY	+	0.281****	(0.000)
MONTH	+	-0.110	(0.181)
Intercept	?	1.212****	(0.000)
N		2 724	
R^2		0.431	
adj. R^2		0.305	
F		88.989	

Robust standard errors

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

6.4 Additional Test – Family Firms and Non-audit Service (NAS) Fees

In recent years, the potential independence impairment issue from the provision of increasing NAS has attracted considerable attention. Zerni (2012) argues that non-audit services may structurally switch the auditor's role from "external skeptical monitor" to "inside advisor", as a result, it inevitably impairs the auditor's independence in substance which resulting in lower quality audits (Ashbaugh, 2004; Firth, 1997; Francis, 2006; Hay, Knechel, & Li, 2006; Srinidhi & Gul, 2007). For the empirical results, Law (2011) documents that the auditor in Hong Kong perceived non-audit services provision threats to their independence. Moreover, because of potential auditor independence issues, excess NAS fee will have an unfavorable effect on the bond rating (Brandon *et al.*, 2004) and the creditability of financial statement (Krishnan *et al.*, 2005).

The controlling family owner has influenced on the appointment of the auditor. As a result, the controlling family owner could exert pressure on the auditor at any time. Our results show that family firms have a higher likelihood of engaging Big5 auditors than non-family firms but incur lower audit fee. Therefore, we also want to check whether audit firms in general may charge lower audit fees in order to maintain closer auditor-client relationship with the family owner, but they may in turn advise the family firm owner to purchase additional non-audit service to earn the compensating income, leading to lower audit fee but higher non-audit fee which may lead auditor independent concern.

Parkash and Venable (1993) argue that it is expected that higher audit quality is required by the firms with higher agency problem, and hence those firms could limit non-audit service purchases from their auditors. However, due to the mixed effect of Type I and II agency problem in family firms as discussed earlier, it is not clear about the level of NAS purchased by family firms relative to non-family firms. Therefore, we cannot predict the sign of the coefficient.

There are relatively few researches published on the determinants of non-audit fees. I argue that many determinants of audit fees should also have a significant effect on non-audit fees. Specifically, we examine the non-audit fees issue using the following model which is the same as the model (b) except including *LOGAFEE*.

$$\begin{aligned} LOGNASFEE = {} & \delta_0 + \delta_1 FAM + \delta_2 PINED + \delta_3 CEODUALITY + \delta_4 LOGBDSIZE + \\ & \delta_5 LOGACSIZE + \delta_6 PINAC + \delta_7 PACAFE + \delta_8 ACMD + \\ & \delta_9 LOGASSET + \delta_{10} LOGREC + \delta_{11} REV + \delta_{12} DERATIO + \\ & \delta_{13} ROA + \delta_{14} ADR + \delta_{15} NSUB + \delta_{16} BIG5 + \delta_{17} LAGQDOPIN + \\ & \delta_{18} LOGAFEE + \varepsilon \end{aligned} \quad \textbf{(c)}$$

Where LOGNASFEE is the natural logarithm of non-audit fee and all other variables are as defined earlier.

The sample size is reduced to 1,713 as the disclosure of non-audit is voluntary only before 2005. As reported in Table 12, all the coefficients on the two family firm measures are negative but insignificant. The results imply that NAS level is almost the same between family and non-family firms. However, the results show that non-audit fees are positively

correlated with audit fees at the 1 percentage significant level. Collectively, the results may suggest that family firms do not disturb auditors' independence through higher non-audit fee. The lower audit fees are not related to higher non-audit fees.

Table 4. Fixed-Effect Regression Model for Non-Audit Fee

This table displays the fixed-effect panel data linear regression results of Model (c). The dependent variables are natural logarithm of non-audit Fees. The key independent variables include the two family firm measures, i.e. FAMCTRL and FAMOWN as well as ACMD. Control variables include firm characteristics and corporate-governance attributes and audit opinion in last year and the natural logarithm of audit Fees. *, **, *** and **** represent 10%, 5%, 1% and 0.1% significance levels, respectively.

	(1)		(2)	
	Coeff.	*p-value*	*Coeff.*	*p-value*
FAMCTRL	-0.465	(0.451)		
FAMOWN			-0.278	(0.753)
PINED	0.365	(0.822)	0.520	(0.750)
CEODUALITY	0.003	(0.994)	-0.005	(0.991)
LOGBDSIZE	-0.376	(0.637)	-0.409	(0.608)
LOGACSIZE	-1.213	(0.208)	-1.245	(0.199)
PINAC	1.305	(0.349)	1.337	(0.334)
PACAFE	-0.363	(0.699)	-0.393	(0.677)
ACMD	0.058	(0.610)	0.055	(0.628)
LOGASSET	0.366	(0.104)	0.364	(0.103)
LOGREC	0.218**	(0.036)	0.220**	(0.034)
REV	-0.429***	(0.008)	-0.432***	(0.007)
DERATIO	-2.464***	(0.006)	-2.489***	(0.005)
ROA	-0.523	(0.284)	-0.533	(0.278)
ADR	0.169	(0.613)	0.169	(0.614)
NSUB	-0.012	(0.280)	-0.012	(0.268)
BIG5	-0.007	(0.987)	-0.025	(0.957)
LAGQDOPIN	-0.208	(0.786)	-0.210	(0.785)
LOGAFEE	0.965***	(0.003)	0.972***	(0.003)
Intercept	-6.031	(0.107)	-6.117*	(0.100)
N	1 713		1 713	
R^2	0.051		0.050	
adj. R^2	0.041		0.040	
F	2.408	(0.000)	2.443	(0.000)

Robust standard errors

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

7. Conclusions

We examine the relation between family ownership and control, and audit committee multiple directorships level on audit fee and auditor choice in Hong Kong Listed firm. Using unique unbalanced panel data of 2724 firm-year observations of firms listed on the main board of HK during the period 2001–2009, consistent with signal theory, our empirical results indicate that compared to non-family firms, family firms are more likely to hire Big N firms to signify their incentives to reduce the agency problem, adopting sound corporate governance practices and also as a signal of credible financial reporting in exchange for better contracting terms (e.g. lower cost of capital). Our results suggest that the choice of external auditors matters to perceived audit risk for family firms. Surprisingly, contrasting the perceived higher audit risk, we also find family firms (measured by family control and family ownership) pay lower audit fee than non-family firms. This is consistent with the notion that the beneficial effect of lower Type I agency problem in family firm outweighs the harm of increasing Type II agency problem (Fan & Wong, 2005; Ho & Kang, 2013). Accordingly, it can reduce the audit work, and subsequently lower audit fees to be charged. Similarly, Firms with higher audit committee multiple directorship level among the independent audit committee members are more likely to use Big 5 auditor but incur lower audit fee, suggesting that the independent audit committee members with multiple directorships are not affected by their busyness. This finding supports the quality hypothesis that multiple directorships imply better quality of directors. All above results are robust with using alternate measures of family control and different sample period (2004-2009). We also find that the firms controlled by recognized Big families incur higher audit fees.

For the additional study, even though family firms have a higher likelihood to engage high-quality auditors than non-family firms but incur lower audit fees, no significant evidence is found to support the view that family firms incur higher for non-audit services from their incumbent auditors, thus no support for the related independence impairment issues of auditors.

Our research extends existing studies on the relationship between firms' ownership, auditor choice, and audit fees by investigating the associations between them simultaneously. Our research also adds to the extant audit committee literature. Future studies could further explore whether family characteristics affect and auditor switch and investigate whether there are other potential reasons why family firms incur lower audit fee such as networking effect.

There are some limitions for this study. Firstly, we have to be cautious when extending the findings to a more general claim. Are the findings applicable to other similar cultural and economic entities, such as Shanghai, Singapore or Malaysia? Hong Kong has a unique legal framework which separates from the Chinese markets, yet with the majority of Chinese listed stocks, the result of family ownership may differ to other Asian markets. Secondly, there can be endogeneity issues in the results, yet, it is very difficult to identify good instruments to conduct robustness checks. While we expect that firms' ownership should not be affected by auditor choices, we have to interpret the results with care. Thirdly, the definition of certain variables has an influence on the regression results. For example, the different of the criterion

we define the "Big N" or the "recognized Big family firms" can impact regression results. Nevertheless, we have tested alternative definitions and find results are mostly consistent with the current results.

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Notes

Note 1. Available on

"http://www.hkexnews.hk/listedco/listconews/advancedsearch/search_active_main.asp"

Note 2. According to the about us of Webb-site: "Webb-site.com established by Mr. David M. Webb who is the ex-INED of Hong Kong Stock Exchange is to provides commentary and firm database and economic, governance, business, finance, investment and regulatory affairs in Hong Kong."

Note 3. "Hausman test" rejects the alternative of "random effects estimation in favor of fixed-effect", therefore I use fixed effect model in this study.

Note 4. O'Brien (2007) suggest that only VIF with the value greater than 5 or 10 indicates a multicollinearity problem.