# MALAYSIAN ACCOUNTING REVIEW

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# MALAYSIAN ACCOUNTING REVIEW

# C O N T E N T S

# DO EXTERNAL AUDITORS PERFORM A CORPORATE GOVERNANCE ROLE IN EMERGING MARKETS? EVIDENCE FROM EAST ASIA

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## Abstract

*In emerging markets, the concentration of corporate ownership has created agency conflicts between controlling owners and minority shareholders, which are difficult to mitigate through conventional corporate control mechanisms such as boards of directors and takeovers. This study examines whether external independent auditors could be employed as monitors and as bonding mechanisms to alleviate these agency conflicts. Using a broad sample of firms from eight East Asian economies, we document that firms are more likely to employ Big Five auditors when they are subject to the agency problem imbedded in their ownership structure. In addition, among East Asian auditees subject to the agency problem, Big Five auditors charge a higher fee and set a lower audit modification threshold while non-Big Five auditors do not. Taken together, this evidence suggests that Big Five auditors in emerging markets do have a corporate governance role.*

## INTRODUCTION

The agency problem of listed companies in East Asia is closely related to their typical concentrated ownership structures. Tight control creates an entrenchment problem that allows controlling owners' self-interested behaviors to go unchallenged internally by the boards of directors or externally by takeover markets. Moreover, the controlling owners often leverage their control by means of stock pyramids and cross shareholdings.[1] This separation of control (voting rights) from ownership (cash flow rights) further increases the controlling owners' incentives to hold up minority shareholders. However, the companies and the controlling owners ultimately have to bear the agency cost as their shares would be traded at discount, reflecting outside investors' anticipation of the entrenchment problem (Claessens et al., forthcoming; La Porta et al., forthcoming). This agency problem could even hinder the development of capital markets; the agency problem is reported by Johnson et al. (2000), Mitton (2000) and Lemmon and Lins (2001) to be a key factor in exacerbating the stock market declines in East Asia during the 1997 financial crisis.

Since that financial crisis, East Asian governments and international organizations (the World Bank and the International Monetary Fund) have made efforts to reform corporate governance and enhance the accountability of corporations. In this paper, we investigate whether independent external auditors in East Asia can serve a corporate governance role by assuring the quality of accounting information. We focus on the auditors' role in safeguarding accounting information, because correct accounting information endorsed by reputable auditors can be served as a critical governance constraint that limits controlling owners' abilities to hold up minority shareholders. On the contrary, if the auditors fail to perform such a role, the controlling owners would have a higher degree of freedom to manipulate accounting information to cover up their self-dealings.

Theory suggests that entrepreneurs requiring external capital would have incentives to mitigate their agency problems by introducing monitoring and/or bonding mechanisms (Jensen and Meckling, 1976). They would voluntarily tie their hands when the expected benefit from external financing exceeds the expected gain from expropriating outside investors. In particular, the entrepreneurs may voluntarily employ reputable intermediaries to assure outside investors of the credibility of the accounting information. The appointment of quality auditors serves as an assurance to the investors that the companies' financial disclosures are accurate and truthful. The assurance is credible because the auditors, with their reputations at stake, will closely scrutinize their clients' books and truthfully disclose their findings. Prior research has documented that auditors do fulfill such an assurance role in the U.S. (Watts and Zimmerman, 1986). However, there is very little research that examines whether or not external auditors fulfill such a role in emerging markets.

Even without research on this topic, there has been debate on whether or not East Asian auditors in practice fulfill the quality assurance role and hence mitigate the agency problem. On the one hand, compared with external auditors in the U.S. and U.K., auditors in East Asia potentially have a stronger governance role because the conventional corporate control systems such as boards of directors and takeover markets are weaker in protecting investors.

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[1] *There is a growing body of literature documenting that the separation of ownership and control is common among public corporations around the world. La Porta et al. (1999) report such evidence from more than 600 corporations in 27 developed countries. Claessens, Djankov, and Lang (2000) report similar evidence for East Asian firms.*

In the presence of Big Five accounting firms, East Asian economies can tap into an international pool of quality auditors. In contrast, the supply of independent directors is only found locally. Also, the entry of international accounting firms has made the market for external auditors vibrant, while the market for takeovers remains stagnant in East Asia. On the other hand, as will be discussed further in the next section, the relationship-based transactions, the weak legal environment and the under-development of the domestic accounting profession in East Asia may have considerably reduced the demand and supply of quality audits in the region. Evidence in a United Nations report (Rahman, 1999) leads to questions about the monitoring role of East Asian external auditors. The report queries why, at the onset of the Asian Financial Crisis, many external auditors had issued clean auditing opinions to firms that went bankrupt within a few months after the completion of the audits.

To test whether or not external auditors perform a governance role, we use a broad sample of East Asian firms to examine first if firms that are subject to more agency conflicts hire "name-brand" (Big Five) auditors. Big Five auditors have international reputations and are generally perceived to be more independent than are local auditors.[2] If Big Five auditors provide better quality assurance, the demand for their services should increase in response to clients' agency problems. In contrast, the opposing hypothesis suggests that a firm's choice of auditor is insensitive to its agency problems; a firm may even avoid hiring a Big Five auditor to reduce external monitoring.

To further examine whether or not East Asian auditors help to mitigate agency conflicts, we investigate if they take into account firms' agency conflicts when making audit pricing and audit opinion decisions. If auditors provide assurance of quality through their superior reputations or if they exert efforts to mitigate agency conflicts, these additional services would be reflected in the audit fee. Thus, we test if, ceteris paribus, auditors charge a premium in response to agency problems. Finally, we test if poor earnings would more likely trigger East Asian auditors to issue modified opinions to firms subject to large agency problems than to those subject to small agency problems. The loss exposure associated with firms' agency problems per se may not be high, but it will be magnified when the firms are in financial distress. Auditors may raise their doubt about their clients' accounting because when these firms approach their terminal years, the entrenched owners have more incentives to expropriate outside shareholders. Also, the controlling owner entrenchment may reduce firm performance and the audit clients' ability to survive the financial crisis. Thus, to poorly performing clients, auditors will respond to the increased risk exposure by giving more modified opinions to clients with large agency problems.

To proxy for the extent of the agency problem in East Asian firms, we focus on the entrenchment of the controlling owners. In particular, we use the controlling owner's control level and the extent to which the control exceeds the actual corresponding portion of ownership. We expect that the most serious agency problems will occur among firms whose owners possess high degrees of control but own only small stakes in the firms.

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[2] *Prior research such as Teoh and Wong (1993) and DeFond and Jiambalvo (1993) has documented using U.S. data that Big Five auditors provide better quality service than do non-Big Five auditors. In Asia, there is very little research providing direct evidence that Big Five auditors are superior. However, several studies, such as Simon, Ramanan, and Dugar (1986), Simon, Teo, and Trompeter (1992), and DeFond, Francis, and Wong (2000), have documented the existence of a Big Five brand-name fee premium in Hong Kong, Singapore and India, which is consistent with prior research on U.S. firms that Big Five auditors are quality-differentiated from non-Big Five auditors in these Asian countries.*

Our overall results suggest that external auditors do perform a governance role in East Asia. In the choice of auditors, we find that firms are more likely to hire Big Five auditors when their ownership structures indicate agency conflicts, i.e., when their ultimate owners possess high control but own only small stakes in the firms. Further tests reveal that the relation between auditor choice and ownership structure exists among small and high-leverage firms whose controlling owner entrenchment problem is likely to be magnified by their higher risk, but not among large and low-leverage firms whose controlling owner entrenchment problem is likely be less acute. Our results also show that Big Five auditors charge a higher fee and set a lower audit modification threshold for auditees with larger agency problems, while non-Big Five auditors do not. More specifically, Big Five auditors charge a fee premium to clients with high control concentrations and a large divergence between control and ownership. Also, we document that poor earnings are more likely to trigger modified opinions for Big Five clients with larger agency problems than those with less severe agency problems. Taken together, the evidence suggests that, in East Asia, the Big Five auditors indeed have monitoring and bonding effects as predicted by the agency theory.

This paper proceeds as follows. Section 2 reviews the literature, discusses the two competing views about the governance role of auditors in East Asia, and presents our hypotheses. Section 3 presents the sample data and Section 4 reports the empirical analyses. In Section 5, we conclude the paper.

## LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

In this section we review the literature on auditors' roles in corporate governance. We discuss two competing views regarding whether or not independent external auditors serve in a governance role in East Asia. We develop several hypotheses pertaining to how auditor choice, audit fee, and audit opinion might reflect East Asian firms' agency problems imbedded in their ownership structures.

### The positive view

Bushman and Smith (2001) argue that publicly reported accounting information, which measures a firm's financial position and performance, can be used as important input information in various corporate governance mechanisms such as managerial incentive plans and monitoring by directors, outside shareholders and debtholders. However, whether and how reported accounting information is used in the governance of a firm depends on the quality and credibility of such information. External auditors can potentially play an important corporate governance role by providing assurance of the quality of publicly reported accounting information.

The governance role of employing external audits to ensure accounting information quality has been more extensively discussed in the Securities Exchange Commission's (1999) pronouncement on Audit Committee Disclosure. This pronouncement suggests that managers of firms with weak corporate governance are less restrained from engaging in opportunistic earnings management activities such as manipulating earnings to meet profit targets in their compensation contracts (Healy, 1985). Recent academic research has also documented that earnings management activities are negatively associated with board independence (Klein, 2000b and Peasnell et al., 2000) and the choice of Big Five auditors (Becker et al., 1998).

Studying the governance role of external auditors in restraining the opportunistic behaviors of managers is not new in academic research. There has been a long-standing interest in the accounting and finance literatures in examining how firms employ monitors and bonding mechanisms that mitigate agency conflicts between firm managers and outside shareholders (Jensen and Meckling, 1976). Titman and Trueman (1986) use a theoretical model to illustrate that an entrepreneur that has decided to take his/her firm public can choose a higher-quality auditor or investment banker to provide investors with information about the firm's true value. Disciplining managers by employing independent auditors to assure information quality is not a modern idea either. Using a historical perspective, Watts and Zimmerman (1983) document that independent audits were demanded since the days of English merchant guilds in the eleventh century to the time when audits were required by law in the twentieth century. Not only is an external audit valued and thus demanded in the absence of law, there is evidence that firms with agency problems are more likely to demand external audits. For example, Chow (1982) uses a sample of U.S. companies from the 1926 Poor's Industrial Manual and documents that large firms with high debt-equity ratios and many accounting-based debt covenants are more likely to hire external auditors.

There have been several U.S. studies that examine auditor choice and the agency problem in more recent periods when external audits were required by law (Palmrose, 1984; Simunic and Stein, 1987; Francis and Wilson, 1988; Eichenseher and Shield, 1989; DeFond, 1992). The common theme of these studies is the linking of auditor choice or switches with the level and/or changes in firm size, leverage and management ownership. These studies find that large firms hire large and/or name-brand auditors. They do not provide significant and consistent evidence that a firm's auditor choice is related to agency problems as measured by management ownership and leverage. Most of the prior studies do not find any significant relation between auditor choice and the agency variables (see Table 1 in DeFond, 1992), and some studies even document results in the opposite direction to the agency hypothesis.[3]

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[3] However, Deli and Gillan (2000) report that the agency problem is relevant in the composition of audit committees in boards of directors. They find that the likelihood of a firm having a fully independent and active audit committee is negatively related to managerial ownership and positively related to leverage.

Table 1
Percentage of Firms That Hire Big Five or Big Five-Affiliated
Auditors by Economy and by Year[a]

| Economy | 1994-1996[b] | 1994 | 1995 | 1996 |
|---|---|---|---|---|
| Hong Kong | 80.6 (525)[c] | 80.0 (100) | 78.5 (208) | 83.1 (217) |
| Indonesia | 87.7 (271) | 84.2 (64) | 86.3 (88) | 90.8 (119) |
| Malaysia | 74.0 (304) | 79.4 (73) | 71.7 (104) | 73.0 (127) |
| Philippines | 62.3 (127) | 19.2 (9) | 61.8 (47) | 87.7 (71) |
| Singapore | 88.3 (362) | 85.5 (71) | 88.8 (142) | 89.2 (149) |
| South Korea | 71.4 (422) | 72.0 (136) | 72.1 (119) | 70.5 (167) |
| Taiwan | 56.1 (125) | 54.8 (34) | 54.4 (43) | 58.5 (48) |
| Thailand | 65.3 (209) | 59.3 (51) | 65.5 (76) | 69.5 (82) |
| All Economies | 75.2 (2,345) | 70.2 (538) | 74.6 (827) | 78.3 (980) |

*Sample:* The sample consists of 3,119 firm-year observations (Big Five and non-Big Five client firms combined) from Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. The auditor identities of the sample firms in these eight economies from 1994 to 1996 are obtained from *Worldscope.*

[a] The percentage of firms that hire Big Five or Big Five-affiliated auditors is calculated based on the number of firm-years that hire Big Five or Big Five affiliate auditors divided by the number of firm-years in the sample for the corresponding economy and year or years.

[b] Pooled sample of data from 1994 to 1996. The other columns are based on sub-samples of each of the three years.

[c] The numbers of  firm-year observations that are clients of Big Five or Big Five-affiliated auditors are in brackets.

One possible explanation for the lack of significant and consistent evidence detailing a relation between the agency problem and auditor choice in these prior studies is that the management ownership level of the U.S. firms is generally low and the variation in the separation of ownership and control is much more significant in East Asian countries (Claessens et al., 2000). Another reason could be that a wide spectrum of corporate governance mechanisms exist in the U.S. that could be employed to alleviate agency conflicts.  The idea that other governance mechanisms can serve as substitutes for external auditing is consistent with the assertion of the U.S. Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees that auditing is but one piece of the firm's overall corporate governance. Also, Klein (2000a) empirically documents that firms' audit committee independence is negatively associated with their choice of other corporate governance mechanisms.

In contrast with U.S. and U.K. corporations that are typically diffusely owned, the ownership and control of corporations is concentrated in East Asia. When ownership is diffuse as in the U.S. and the U.K., agency problems stem from conflicts of interest between managers and shareholders. As ownership concentration increases to a level where an owner obtains effective control of the firm, as is the case of East Asia, the nature of agency problems shifts away from manager-shareholder conflicts to conflicts between the controlling owner and minority shareholders (Shleifer and Vishny, 1997). The majority shareholders' ability to effectively control the firm has made conventional corporate governance mechanisms such as corporate takeovers and boards of directors ineffective in containing these controlling owners' self-interested activities. The monitoring role of independent directors has been

ineffective due to the lack of supply of qualified directors in these economies. The market of independent directors has yet to develop because, traditionally, controlling owners expect to hire directors to work for them, not for the outside shareholders. The external audit market, however, is much more developed in East Asia because of the statutory audit requirement for publicly listed firms. Independent external auditors, especially with the entry of Big Five firms that follow international auditing practice and draw on expertise internationally, could fill this void in corporate governance and serve as credible monitors of the controlling shareholders. In East Asia, external auditors could perform the corporate governance role through limiting the controlling shareholders' ability to manipulate accounting information and hence their ability to extract wealth from outside shareholders. For instance, an auditor would note when the controlling owner manages earnings downward to justify the low cash dividends paid to outside shareholders or when the controlling owner profits from transactions with the firm he/she controls by manipulating accounting numbers to influence the selling or purchase price. Also, many of these transactions are done through a related party. Increasing the disclosure level of related-party activities could discourage such self-dealing activities. A typical case is discussed in a recent Asian Wall Street Journal (June 13, 2001) article concerning how the controlling owner of a Korean conglomerate issued small cash dividends and profited from related-party transactions, while the minority shareholders were calling for an extraordinary general meeting to elect an outside independent auditor to monitor the controlling owner.

The corporate governance role of external auditors is frequently discussed in many recent publications by regulators and practitioners in East Asia. For instance, the Securities Exchange Commission of Thailand Corporate Governance Report (1999) argues that transparency is one of the most important aspects of good corporate governance since it allows shareholders to use the disclosed information to monitor the performance of the management. Thus, external auditors could play an important corporate governance role by providing assurance to the accuracy and reliability of financial statements of listed companies. Other publications such as the Asian Corporate Governance Association research report (2000), Corporate Governance 1999 Survey of Institutional Investors by PricewaterhouseCoopers of Singapore (1999), and the Korean Committee on Corporate Governance report (1999) also highlight the importance of corporate disclosure and transparency, and the role of external auditing as part of good corporate governance practice.

**The negative view**

We have discussed the positive view that auditors in East Asia could provide quality assurance of accounting information and hence help to mitigate agency conflicts. On the other hand, a negative view suggests that the lack of market demand for and the auditors' willingness to supply quality audits may render it impossible for external auditors to be effective monitors. On the demand side, controlling owners may not desire to hire high-quality auditors or they even hire low-quality auditors to reduce external monitoring. Backman (1999) argues that auditing runs against the general culture in Asia where business transactions are relationship based. The idea of needing to monitor and to double-check a company's accounts implies distrust and may lead to open confrontation between owners and investors. Also, political rent seeking is prevalent and highly lucrative in East Asia. Firms in this region may choose to remain opaque in order to prevent competition and/or social sanctions. Even if minority shareholders demand high-quality external audits, they can always be out-voted by the

controlling owner.[4] In addition, investors may question the value of external audits because the rendered opinions by the auditors often do not result in appropriate legal sanctions on firms in emerging markets where law enforcement is weak. Choi and Wong (2002) and Francis et al. (2002) also find evidence suggesting that the demand for high quality external audits by Big Five firms is significantly lower in countries with weak legal environments. On the supply side, the lack of audit expertise and of experienced professionals in the local auditing profession weakens auditors' ability to serve as effective monitors.[5] Also, there is a growing concern in the market that auditors' monitoring role may be in conflict with their consulting activities with client firms, an issue not unique to Asia. There has been a growing concern that the lack of disciplinary mechanisms in the auditing profession may have weakened the independence of auditors in Asia.[6]

Consistent with this view, DeFond, Wong, and Li (2000) find that as the Chinese government made efforts to improve auditor independence, domestic firms listed in China took flight from high-quality to low-quality auditors. They document that, in 1996, the percentage of modified opinions increased by nine fold after the promulgation of new auditing standards to improve audit quality. However, as audit firms toughen their standards, those that provided high-quality monitoring services lost market share to low-quality audit firms.

**Ownership structure as a proxy for agency conflicts**

We use the ownership characteristics of the East Asian firms to capture empirically the extents of their agency problems. Specifically, after obtaining effective control[7] of a firm, the controlling owner can determine the profit distribution and opportunistically deprive minority shareholders of their rights to share profits. In addition, the controlling owner often secures effective control of the firm through complicated stock pyramids and cross shareholdings. These arrangements enable the controlling owner to command a given level of control while committing a less-than-equivalent ownership share. This separation of control and ownership allows the controlling owner to extract wealth from the firm, receive the entire benefit, but only bear a small fraction of the cost than when there is no separation of control and ownership. We

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[4] The audit committees in East Asian corporations are either non-existent or ineffective, which leaves minority shareholders' interests unprotected. In East Asia, only Hong Kong, Singapore and Malaysia view audit committees as a feature of good corporate governance for publicly listed companies. Even if audit committees exist, they often fail to represent the interests of minority shareholders because controlling owners are likely to dominate these committees.

[5] The number of CPAs (certified public accountants) and/or CAs (chartered accountants) as a percentage of the population is low among East Asian countries compared with the U.S. (0.1%), Canada (0.3%), and Australia (0.6%). Except for Hong Kong (0.2%) and Singapore (0.2%), most other East Asian countries such as Korea (0.01%), Indonesia (0.006%), Malaysia (0.07%), the Philippines (0.02%), and Thailand (0.008%) are significantly below the standards of developed economies in regards to the numbers of CPAs and CAs. Schipper (2000) argues that the lack of expertise and professionalism greatly limit the quality of auditors in developing economies.

[6] In economies such as Hong Kong and Malaysia, there have been questions concerning the effectiveness of self-regulation of the accounting profession in the wake of the Asian Financial Crisis (The Hong Kong Economic Journal, April 22, 1999; New Straits Times Press, February 16, 1997). Even in places such as Thailand, where the accounting profession is regulated by the government, there have been government reports admitting that the monitoring efforts are inadequate (Securities and Exchange Commission of Thailand, 1999).

[7] The effective control level is likely affected by the distribution of voting rights, which is, in turn, affected by laws, corporate charters, and ownership dispersion. The level therefore varies across firms and economies. However, Bradley and Kim (1985) show that tender offers are rare when incumbent owners possess more than 20 percent of the voting power.

offer a simple example to illustrate this point.[8] A family firm owns 50% of Company A and is considering buying 20% of Company B. To save capital funds, the family firm can exercise its control power to make Company A buy 20% of Company B. This way, the family firm only bears half of the purchase cost through its 50% ownership in Company A, while the other half is borne by the outside shareholders of Company A. Comparing to having the family firm investing directly into Company A and B separately, which is the typical horizontal corporate structure, this chain of ownership from the family firm to Company A and then to Company B is termed the pyramid ownership structure. As a conservative measure, we say that the family firm controls 20% of the voting power in Company B, which is the weakest link in this chain of control rights in the pyramid. However, the family owns only 10% of the cash flow rights of Company B, which is the product of the two ownership stakes along the chain. This separation of ownership and control under the pyramid structure exacerbates the agency problem in Company B because every dollar stolen from it costs the family firm only 10 cents. Under the horizontal ownership structure, it would cost the family firm more (20 cents) to steal from Company B and the family firm's control level equals its ownership level at 20%. Thus, the controlling owner's incentive to expropriate is expected to increase with the degree of the divergence between the control and the ownership.[9]

**Hypotheses**

The above discussion suggests that external auditors may or may not fulfill a corporate governance role in East Asia. On the one hand, East Asian auditors may play a more significant governance role, as there are fewer conventional corporate control mechanisms available. On the other hand, the institutional environment and the concentrated corporate ownership structure in East Asia may reduce the demand and supply of quality audits, and weaken the governance role of external auditors. To address this question empirically, we first test if firms with large agency problems, proxied by their controlling owners' level of voting rights compared with the owners' cash flow rights, would have a larger demand for name-brand (Big Five) auditors who have international reputations and are generally perceived to be more independent. Our formal (alternative) hypothesis is:
*H1: A firm's decision to hire a Big Five auditing firm is positively related to its ultimate owner's ability to obtain effective control and/or the degree to which the control exceeds ownership.*

If the null hypothesis is not rejected, it will mean that controlling owners who experience agency conflicts may actually not always hire or may even avoid Big Five auditors to evade monitoring.

In addition to examining how agency problems affect firms' choice of auditors in East Asia, we perform two tests of whether external auditors play a proactive role in monitoring firms with agency problems. In particular, we examine whether agency problems affect East Asian auditors' pricing and opinion decisions. In the audit pricing analysis, we examine if auditors

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[8] *More detailed pyramid examples using actual corporate groups in East Asia are available in Claessens, Djankov, and Lang (2000).*

[9] *Several recent studies have suggested that these ownership characteristics reasonably capture the agency problem in East Asia. Claessens et al. (2000a) report that the divergence between control and ownership rights reduces the value of East Asian firms, which is consistent with the existence of the agency problem. Fan and Wong (2001) report that the credibility of East Asian firms' accounting information decreases with agency conflicts as captured by the firms' ultimate owners' control level and the divergence between their control and ownership rights.*

charge a fee premium for their clients' agency problems. Again, we use controlling owners' level of ownership concentration and the degree of separation of ownership and control as a proxy for the degree of agency problems. In an organization that ownership is concentrated, major decision rights remain in the hands of a few individuals, typically members of the same family. Under such organization structure, there is usually not enough separation of duties and independent check and balance mechanisms to restrain the abuse of power by the controlling owners. This lack of internal control together with the poor management integrity associated with the agency problem will increase auditors' assessments of the control risk. This increase in control risk would translate into more audit hours or a large risk fee premium, increasing the total audit fee. We therefore test if, ceteris paribus, East Asian auditors charge their clients who have larger agency problems higher fees. Our formal (alternative) hypothesis is:

*H2: The audit fee charged to a firm is positively related to the firm's ultimate owner's ability to obtain effective control and/or the degree to which the control exceeds the ownership.*

Prior studies on audit fees have focused on examining how firm size or brand name (Simunic, 1980; Francis, 1984), industry specialization (Craswell, Francis, and Taylor, 1995; DeFond, Francis, and Wong, 2000), and litigation risk (Clarkson and Simunic, 1994; Simunic and Stein, 1996) affect audit fees. There have been some recent studies that examine the relation between different corporate governance and audit fees. Carcello et al. (2000) document that a more independent, diligent, and expert board would demand greater external auditing and pay a higher audit fee. However, there may exist some underlying firm characteristics such as management entrenchment problems that raise the demand for high-quality boards and external audits, causing a spurious correlation. In another study using a sample of 67 Hong Kong listed firms, Gul, Tsui, and Chen (1998) document that family control is associated with lower audit fees. They interpret the result as being consistent with the view that family firms are subject to fewer agency problems than are non-family firms. Our study specifically tests if audit pricing is a function of the client firm's agency conflicts between majority and minority shareholders.

Finally, we want to examine whether East Asian auditors would take into account a firm's agency problems before issuing the audit reports. More specifically, we test if low earnings are more likely to trigger modified opinions by auditors for client firms with larger agency problems than for client firms with smaller agency problems. There are two arguments that support this hypothesis. First, the loss exposure associated with the client firm's agency problems per se may be a small concern when the firm is profitable, but it will become more serious when the firm is in financial distress. When a firm approaches its terminal year, its controlling owner has greater incentive to expropriate outside shareholders as the benefits of maintaining a good reputation for future financing diminish. Thus, in bad times, the controlling owner is more prone to engage in self-interested behavior. Second, the controlling owner's entrenchment may weaken the ability of the firm to recover from poor performance, therefore increasing its bankruptcy risk. Therefore, if auditors serve as external monitors and take into account the risks associated with bankruptcy and the controlling owners' entrenchment, they will more likely give modified opinions to poorly performing firms with large agency problems. Our formal (alternative) hypothesis is:

*H3: Poor earnings will more likely trigger auditors to issue modified opinions to firms whose ultimate owners possess high degrees of control and achieve the control through less-than-equivalent ownership investment.*

## Data sample

Our primary data source is Worldscope. This database contains annual data regarding auditor names, audit fees, audit opinions, and financial information for listed companies from over 40 economies around the world. From the database, we select sample firms from eight East Asian economies — Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. We select 1994 through 1996 as the period of analysis. We do not include the post-1996 period in our study to avoid possible structural shifts after the 1997 Asian Financial Crisis. We also exclude pre-1994 data because there are a great number of missing data in this earlier period.

We need to identify the ultimate controlling owners of each firm and what share of the control and ownership rights they hold. For this ownership information, we refer to data assembled by Claessens, Djankov, and Lang (2000). Their ownership database traces the complex ownership structure and identifies the ultimate controlling owners of about 3,000 publicly traded corporations in nine East Asian economies as of 1996, including the eight economies we selected for the study. We merge the 1996 ownership data with the 1994-1996 audit and financial data because ownership of our sample firms was stable over the sample period.

## Basic statistics

As shown in Table 1, our final sample consists of 3,119 firm-year observations from 1994 to 1996. These observations all have auditor, ownership, and financial data that are required for constructing our empirical measures. Our final sample represents 28% of all the listed companies in the eight economies.[10] The table shows that Big Five or Big Five-affiliated auditors dominate the auditing activities in the eight economies in our sample. Singapore has the highest percentage of Big Five or Big Five-affiliated auditors with 88.3%, followed by Indonesia with 87.7%, Hong Kong with 80.6%, Malaysia with 74%, South Korea with 71.4%, Thailand with 65.3%, the Philippines with 62.3% and Taiwan has the lowest percentage with 56.1%. In this paper, we do not distinguish between Big Five auditors and Big Five-affiliated auditors. In Indonesia, Korea, the Philippines and Thailand, foreign accounting firms are not permitted to practice without partnering with local firms. All the Big Five auditors in these countries have joined up with large local firms to form Big Five-affiliated firms. The local firms provide valuable business contacts while the Big Five firms provide technical expertise and their international networks of member firms.[11]

Not all the firms in Worldscope contain audit opinion information. The modified opinion in Worldscope includes disclaimer and adverse opinions, and it does not distinguish among the various types of modified opinions, such as asset realization, litigation, and going concern. Combining all these opinions into one should not create a bias in favor of our second hypothesis. In our sample, only 2,335 firm-year observations include an audit opinion.

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[10] As in year 1996, the percentages of companies represented in our sample are 37% for Hong Kong, 47% for Indonesia, 20% for Malaysia, 33% for the Philippines, 22% for South Korea, 56% for Singapore, 13% for Taiwan and 18% for Thailand.

[11] A case in point is the merger of Arthur Andersen and SyCip, Gorres, Velayo and Company (SVG) in the Philippines. SVG was a local firm set up by Washington SyCip in Manila in 1946. During our sample period of 1994 to 1996, Arthur Andersen merged with SVG, which explains why the percentage of market share for Big Five firms increased from 19.2% to 87.7% in the Philippines during this period.

Table 2 presents the percentage of modified opinions by economy and by year in our sample.[12] On average, only two percent of the companies in our sample received a modified opinion. The percentage of modified opinions is highest in 1995 and lowest in 1994. In addition, the cross-economy distribution of modified opinions is uneven with Indonesia reporting no modified opinion, while Thailand reported 13.3% modified opinions from 1994 to 1996.

**Table 2**
**Percentage of Modified Opinions by Economy and by Year[a]**

| Economy | 1994-1996[b] | 1994 | 1995 | 1996 |
|---|---|---|---|---|
| Hong Kong | 1.80 (8)[c] | 0.00 (0) | 1.08 (2) | 3.33 (6) |
| Indonesia | 0.00 (0) | 0.00 (0) | 0.00 (0) | 0.00 (0) |
| Malaysia | 0.65 (2) | 1.41 (1) | 0.95 (1) | 0.00 (0) |
| Philippines | 4.88 (6) | 7.14 (2) | 4.17 (2) | 4.26 (2) |
| Singapore | 0.92 (3) | 0.00 (0) | 0.79 (1) | 1.48 (2) |
| South Korea | 0.20 (1) | 0.68 (1) | 0.00 (0) | 0.00 (0) |
| Taiwan | 0.49 (1) | 0.00 (0) | 0.00 (0) | 1.30 (1) |
| Thailand | 13.33 (28) | 3.85 (2) | 19.74 (15) | 13.41 (11) |
| All Economies | 2.10 (49) | 1.08 (6) | 2.50 (21) | 2.35 (22) |

*Sample:* The sample consists of 2,335 firm-year observations of audit opinions from Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. These audit opinions, either clean or modified, for the sample firms in these eight economies from 1994 to 1996 are obtained from *Worldscope.*
[a] The percentage of modified opinions is calculated based on the number of firm-years that received modified opinions divided by the total number of firm-years in the sample for the corresponding economy and year or years.
[b] Pooled sample of data from 1994 to 1996. The other columns are based on sub-samples of each of the three years.
[c] The actual numbers of modified opinions are in brackets.

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[12] *For Indonesia, the Philippines, South Korea, Taiwan, and Thailand, the standards and format for audit reports generally follow those of the U.S. The standards and reporting format of audit reports in Hong Kong, Malaysia, and Singapore generally follow the international auditing guidelines.*

Audit fees are not mandatorily disclosed except in Hong Kong, Malaysia and Singapore. Thus, Worldscope contains audit fee data only for these three economies in our sample, comprising 1,304 firm-year observations. The mean and median audit fees of the three economies are reported in Table 3. The fee data show that Hong Kong firms spend the most in U.S. dollars and as a percentage of assets (reported in brackets) on audit services, while Malaysian firms incur the lowest fees for such services.

**Table 3**
**Audit Fees by Economy and by Year**

| Economy | 1994-1996[a] | | 1994 | | 1995 | | 1996 | |
|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | Mean | Median | Mean | Median |
| Hong Kong | 350.38 | 200.67 | 342.41 | 202.39 | 337.53 | 195.78 | 368.79 | 208.03 |
| | (0.11)[b] | (0.09) | (0.09) | (0.08) | (0.11) | (0.09) | (0.11) | (0.09) |
| Malaysia | 130.30 | 50.38 | 112.32 | 50.85 | 111.28 | 49.20 | 161.02 | 51.09 |
| | (0.04) | (0.02) | (0.03) | (0.02) | (0.03) | (0.02) | (0.05) | (0.02) |
| Singapore | 206.71 | 132.90 | 196.63 | 119.34 | 193.77 | 124.82 | 227.65 | 145.41 |
| | (0.11) | (0.07) | (0.10) | (0.06) | (0.11) | (0.07) | (0.12) | (0.07) |
| All Three Economies | 243.92 | 138.12 | 227.66 | 131.67 | 232.62 | 135.76 | 266.71 | 146.68 |
| | (0.09) | (0.05) | (0.08) | (0.05) | (0.09) | (0.06) | (0.09) | (0.06) |

*Sample:* The sample consists of 1,304 firm-year observations of audit fees from Hong Kong, Malaysia, and Singapore. The audit fee data for the sample firms in these three economies from 1994 to 1996 are obtained from *Worldscope*.
[a] Pooled sample of data from 1994 to 1996. The other columns are based on sub-samples of each of the three years.
[b] The audit fees reported are in U.S.$ (thousands). In brackets, the audit fee as a percentage of total assets is reported.

### Measuring the ultimate owners' control and ownership levels

Most prior studies of ownership structure focus on immediate ownership, which constitutes common shares directly owned by individuals or institutions. Immediate ownership is not sufficient for characterizing the ownership and control structure of East Asian firms, as these firms are often associated with complicated indirect ownership. In contrast to these prior studies, we focus on ultimate ownership as identified in Claessens, Djankov, and Lang (2000). For a given firm, the ultimate owners and their share of control (voting) and ownership (cash flow) rights are identified. To make the distinction between voting and cash flow rights, firm-specific information on pyramid structures and cross-holdings is required.

The procedure for identifying the ultimate owners is similar to the one used by La Porta et al. (1999). An ultimate owner is defined as the shareholder who holds at least 5% of the voting rights of the company and who is not controlled by anybody else. To economize on the data collection task, tracing further voting control stops at 50% and the ultimate owner's voting rights level is set equal to 50% once we reach this level. This ceiling is reasonable because the ultimate owner unambiguously gains full control once 50% of the voting rights is secured. Although a company can have more than one ultimate owner, we focus on the largest ultimate

owner.  With the highest level of voting rights, the largest ultimate owner is more likely than smaller owners to be the controlling owner of the firm.

For a given firm, an ultimate owner's voting control level is defined as the ownership stake at the weakest link along the control chains connecting the ultimate owner and the firm.  The cash flow rights that support the control by the ultimate owner equal the sum of the products of the ownership stakes of affiliated firms from each control chain identified.

Consistent with statistics reported by Claessens, Djankov, and Lang (2000) and Fan and Wong (2001), East Asian corporations exhibit high levels of concentration of control in our sample: the mean level of voting rights of the ultimate owner is 27%. This is in contrast to U.S. firms studied in most prior research, which are characterized by diffuse ownership and control. The highest mean control concentration is found in Thailand (35%), followed by Indonesia (34%), Hong Kong (29%), Malaysia (28%), Singapore (27%), Taiwan (19%), and South Korea (17%). The sample mean cash flow rights over voting rights (CV) of 0.87 indicates that there is a significant degree of divergence between the two rights.  The mean CV ratios across the eight economies in ascending order are: Indonesia (0.79), Singapore (0.82), Taiwan (0.84), Malaysia (0.86), Hong Kong (0.88), South Korea (0.89), the Philippines (0.91) and Thailand (0.96).[13]

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[13] *This is consistent with La Porta et al. (1999) that the top 20 largest firms in Hong Kong, Singapore and South Korea have more concentrated and pyramidal ownership structures than those in the U.S. Among the top 20 largest firms, 90% in Hong Kong, 85% in Singapore and 45% in South Korea are controlled by an ultimate owner with more than 20% of the voting rights, while only 20% in the U.S. have such level of ownership concentration. Also, none of the top 20 U.S. firms have pyramid ownership structure, but a large portion of these top 20 East Asian firms do: 39% in Hong Kong, 41% in Singapore and 33% in South Korea.*

## EMPIRICAL ANALYSES

This section reports the results of our empirical tests on the determination of auditor choice, audit fees, and audit opinions.

### Auditor choice

We test our first hypothesis that a firm's choice of auditor is related to the firm's ownership structure using the following pooled cross-sectional LOGIT regression model:

$$AUDITOR_{it} = a_0 + a_1\ SIZE_{it} + a_2\ LEV_{it} + a_3\ GROUP_i + a_4\ PYRAMID_i + a_5\ DEV_i$$
$$+\ a_6\ CV_i + a_7\ DEV_i{}^*CV_i + a_8\ \text{fixed effects} + u_{it}$$

where, for sample firm $i$ ,

$AUDITOR_{it}$ = 1 when the auditor is a Big Five (including affiliated) accounting firm at year $t$, and 0 otherwise;

$SIZE_{it}$ = the natural logarithm of total assets in millions of U.S. dollars at the end of year $t$;

$LEV_{it}$ = the long-term debt divided by total assets at the end of year $t$ ;

$GROUP_i$ = 1 when the client firm is a member of a corporate group, and 0 otherwise;

$PYRAMID_i$ = 1 when the client firm is controlled by an affiliated firm through a stock pyramid, and 0 otherwise;

$DEV_i$ = 1 when the percentage of voting rights possessed by the largest ultimate owner of the firm exceeds the median in the corresponding economy, and 0 otherwise;

$CV_i$ = the ratio of cash flow rights to voting rights of the largest ultimate owner;

Fixed effects = dummy variables controlling for fixed effects of industries, calendar years and economies;

$u_{it}$ = an error term at year $t$.

We include total assets and leverage in the model to control for client size and risk. In addition, *GROUP* and *PYRAMID* are used as a control for organizational complexity.[14] Firms belonging to complex corporate groups are likely to have numerous related-party transactions, which complicate the earnings recognition and accounting consolidation processes. This is particularly the case for firms in the top layers of pyramids that have to incorporate earnings of their affiliated firms in the lower layers of pyramids.[15] We expect that group firms and particularly firms in the top layers of pyramids have a stronger demand for Big Five auditors. The three ownership variables, *DEV*, *CV* and *DEV\*CV* are our experimental variables. *DEV* is median-adjusted to net out economy level differences in voting control level. This adjustment can hopefully take into account some of the economy-by-economy variation in the minimum level of voting rights needed for effective control due to institutional differences. We regard a firm is likely to have an ultimate owner with effective control if his/her level of voting rights is

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[14] *The information on pyramids is from Claessens, Djankov, and Lang (2000). The group affiliation information is from Claessens et al. (2000b), which includes 170 large corporate groups across the eight economies. Firms that are affiliated with small groups, i.e., outside the 170 groups, are treated as independent firms. Firms belonging to the same group do not always hire the same auditor, nor do they always hire auditors in the same class (Big Five or non-Big Five). Each group on average has four member firms (in our final sample) and hires two distinct Big Five auditors and one non-Big Five auditor. Fifty-five of the 170 groups hire at least one Big Five auditor and one non-Big Five auditor among their members.*

[15] *Except for South Korea where consolidation of accounts from subsidiaries is required only in supplementary statements, all other economies in our sample require consolidation in the companies' primary financial statements.*

higher than that of the economy median.  To reject the null of *H1*, we should find that more firms with high control (*DEV*=1) and/or larger separation of control and ownership (*CV*<1) hire Big Five auditors. Thus, we expect that the coefficient of *DEV* is positive and that the coefficients of *CV* and/or *DEV*CV* are negative. We include the interaction term *DEV* CV* because *CV* may have not effect on auditor choice if the ultimate owner does not have effective control of the firm (*DEV*=0).

Before presenting our regression results, we compare each explanatory variable in year 1996 between Big Five and the non-Big Five clients. The results presented in Table 4 show that the control concentration and the divergence between control and ownership rights are statistically significantly higher for Big Five clients than for non-Big Five clients based on the t-test for means and the Wilcoxon signed rank test for medians, supporting the alternative of *H1*.  In addition, there is a higher proportion of Big Five clients belonging to corporate groups based on the mean and median tests, suggesting that the demand for Big Five auditors is associated with group complexity. In terms of client size, Big Five clients have larger mean and median total assets but only the difference in the mean is statistically significant. However, the leverage and the proportion of firms at the bottom of the pyramids are not statistically different between the two groups.

**Table 4**
**Comparison of Firm Characteristics between Big Five Clients and**
**Non-Big Five Clients in Year 1996**

|  | All firms[a] | | Firms hiring Big Five auditors[b] | | Firms hiring non-Big Five auditors[c] | | T-statistics for the difference in means[d] | Z-statistics for the difference in medians[e] |
|---|---|---|---|---|---|---|---|---|
|  | Mean | Median | Mean | Median | Mean | Median | | |
| TA | 2,079 | 386 | 2,224 | 388 | 1,552 | 363 | 1.94* | 0.75 |
| LEV | 0.14 | 0.11 | 0.14 | 0.10 | 0.14 | 0.12 | -0.10 | -1.35* |
| EV (%) | 0.82 | 0.00 | 1.12 | 0.00 | -0.28 | 0.00 | 1.80* | 1.44* |
| CV | 0.87 | 1.00 | 0.86 | 1.00 | 0.89 | 1.00 | -2.38*** | -2.27** |
| GROUP | 0.59 | 1.00 | 0.61 | 1.00 | 0.54 | 1.00 | 2.05** | 2.07** |
| PYRAMID | 0.37 | 0.00 | 0.38 | 0.00 | 0.35 | 0.00 | 0.87 | 0.86 |

Variable definitions: TA is total assets in millions of U.S. dollars; LEV is long-term debt divided by total assets; EV is the percentage of voting rights possessed by the largest ultimate owner of the firm minus the median percentage of voting rights in the corresponding economy; CV is the ratio of cash flow rights to voting rights of the largest ultimate owner; GROUP = 1 when the client firm is a member of a corporate group, and 0 otherwise; PYRAMID = 1 when the client firm is controlled by an affiliated firm through a stock pyramid, and 0 otherwise. Sample: The sample consists of 1,251 firms with financial, group and ownership data for 1996 from Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. The 1996 financial data are obtained from Worldscope. The 1996 ultimate ownership and group data are obtained from Claessens, Djankov, and Lang (2000).
[a] All 1,251 firms in the sample.
[b] 980 firms are clients of Big Five or Big Five affiliated auditors.
[c] 271 firms are clients of non-Big Five auditors.
[d] T-statistics for the difference in means between firms hiring Big Five or Big Five affiliated auditors vs. non-Big Five auditors.
[e] Z-statistics for the difference in means between firms hiring Big Five or Big Five affiliated auditors vs. non-Big Five auditors.
***, **,* denote statistical significance at 1%, 5%, and 10% in two-tailed test.

Table 5 presents the LOGIT regression results estimated for the pooled sample period from 1994 to 1996 and separately in each of the three years. Fixed effects are included in the regressions where appropriate, but for simplicity they are not reported. The pooled time-series results show that large firms are more likely to hire Big Five auditors. Also, *DEV* is positive and statistically significant, while *DEV*CV* is negative and statistically significant. This supports the alternative of *H1* that the demand for Big Five auditors is positively associated with the degree of agency problems as captured by the controlling owners' ability to command effective control and the divergence of their control and ownership. Similar to the pooled time-series results, the coefficient of *DEV* is positive and significant, while *DEV*CV* is negative and statistically significant in the 1994 and 1995 regressions. In the 1996 regression, *CV* is negative and significant while other ownership variables are not statistically significant. Taking both the pooled time-series and annual regression results together, the evidence is consistent with the alternative of *H1* that East Asian firms with larger agency conflicts tend to hire Big Five auditors.

**Table 5**
**LOGIT Regression Results for Auditor Choice[a]**

|  | 1994-1996 | 1994 | 1995 | 1996 |
|---|---|---|---|---|
| Intercept | -0.11 | -0.12 | 0.02 | 0.58 |
|  | (-0.21) | (-0.12) | (0.03) | (0.65) |
| SIZE | 0.10*** | 0.06 | 0.07 | 0.14*** |
|  | (3.44) | (0.98) | (1.53) | (2.86) |
| LEV | -0.05 | -0.06 | -0.18 | 0.02 |
|  | (-0.18) | (-0.11) | (-0.34) | (0.03) |
| GROUP | 0.07 | -0.02 | 0.07 | 0.08 |
|  | (0.68) | (-0.12) | (0.42) | (0.45) |
| PYRAMID | -0.24* | -0.11 | -0.13 | -0.48** |
|  | (-1.81) | (-0.40) | (-0.58) | (-2.10) |
| DEV | 1.18*** | 1.39* | 1.40** | 0.71 |
|  | (2.77) | (1.67) | (2.00) | (0.96) |
| CV | -0.12 | 0.44 | 0.23 | -1.01* |
|  | (-0.37) | (0.70) | (0.41) | (-1.70) |
| DEV*CV | -1.26*** | -1.73* | -1.47* | -0.68 |
|  | (-2.67) | (-1.85) | (-1.91) | (-0.84) |
| Pseudo R2 | 0.06 | 0.12 | 0.06 | 0.07 |
| Observations | 3119 | 760 | 1108 | 1251 |
| Chi-square | 214.78 | 108.77 | 69.92 | 92.58 |
| Degrees of Freedom | 22 | 20 | 20 | 20 |
| P-value | 0.0001 | 0.0001 | 0.0001 | 0.0001 |

**Table 5 (continued)**

Model specification: $AUDITOR_{it} = a_0 + a_1 SIZE_{it} + a_2 LEVit + a_3 GROUP_i + a_4 PYRAMID_i + a_5 DEV_i + a6 CV_i + a_7 DEV_i*CV_i + a_8$ fixed effects $+ u_{it}$
Variable definitions: AUDITOR = 1 when auditor is a Big Five accounting firm, and 0 otherwise; SIZEit = natural logarithm of total assets in millions of U.S. dollars at the end of year t; $LEV_{it}$ = long-term debt divided by total assets at the end of year t; $GROUP_i$ = 1 when the client firm is a member of a corporate group, and 0 otherwise; $PYRAMID_i$ = 1 when the client firm is controlled by an affiliated firm through a stock pyramid, and 0 otherwise; $DEV_i$ = 1 when the percentage of voting rights possessed by the largest ultimate owner of the firm exceeds the median in the corresponding economy, and 0 otherwise; $CV_i$ = the ratio of cash flow rights to voting rights of the largest ultimate owner; Fixed effects = dummy variables controlling for fixed effects of industries, calendar years and economies when appropriate. For simplicity, results for the fixed effects are not reported.
Sample: The sample includes 3,119 firm-year observations, spanning between 1994 and 1996 covering Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. To be included in the sample, a firm must have at least one year of financial data and its auditor identity from Worldscope, and its ultimate ownership data must be available from Claessens, Djankov, and Lang (2000).
[a]The first LOGIT regression is run pooling across economies and years from 1994 to 1996. The other three LOGIT regressions are run annually pooling across economies.
***, **, and * denote 1%, 5% and 10% 2-tailed test.

To further test the effect of agency conflicts between majority shareholders and minority shareholders on the demand for Big Five auditors, we partition our sample by client size, profit and leverage.  For a given ownership structure, we expect that the degree of agency conflicts is more severe in small, low-profit, or high-leverage firms. The entrenchment problem of the controlling owners is large when the expected loss from being detected is small. Controlling owners of firms that are smaller or are in financial distress are particularly prone to engage in self-interested behaviors at the expense of outside investors, as their expected loss of reputation and business is low.  To be consistent with the monitoring hypothesis, we should find that the hypothesized effects of effective control and divergence between control and ownership rights on auditor choice are stronger for small, low-profit, or high-leverage firms and weaker for larger, more profitable, and low-leverage firms.

Table 6 reports the pooled time-series cross-sectional regressions partitioned by client profit, leverage, and size separately.  The sample partition is based on the within-economy three-year medians.  For example, client firms are partitioned into the high (low) profit subgroup if their return on assets is higher than or equal to (lower than) the corresponding three-year median in the economy. The regression presented in Table 5 is re-estimated using the high and low profit subgroups separately. This procedure is repeated for leverage as measured by total liability over total assets and then for size as measured by total assets. The results show that DEV is positive and significant while DEV*CV is negative and significant in the small and the high-leverage firms but not in the large and the low-leverage firms, while these results are present in both the high and the low-profit samples.  The evidence in Table 6 suggests that audit client size and leverage can influence the sensitivity of the relation between auditor choice and the client's ownership structure.[16]

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[16] Another interpretation for the high-leverage sample result is that banks may require their clients with large agency problems to hire more reputable auditors to mitigate their agency problems. Since most long-term debt in East Asia is bank debt, high leverage may be a proxy for this demand from banks.

**Table 6**
**LOGIT Regression Results of Auditor Choice by Profitability, Leverage,**
**and Firm Size Partitions[a]**

| | Low profit firms[b] | High profit firm[s] | High leverage firms[b] | Low leverage firm[s] | Small firms[b] | Large firm[s] |
|---|---|---|---|---|---|---|
| Intercept | 1.20 | -1.23 | -0.38 | -2.25** | -0.57 | 0.64 |
| | (1.57) | (-1.50) | (-0.41) | (-2.17) | (-0.55) | (0.62) |
| SIZE | 0.05 | 0.17*** | 0.06 | 0.37*** | 0.15* | 0.09 |
| | (1.27) | (3.30) | (1.04) | (5.62) | (1.87) | (1.54) |
| LEV | -0.33 | 0.27 | 0.13 | -3.03*** | 0.30 | -0.55 |
| | (-0.81) | (0.65) | (0.33) | (-3.24) | (0.79) | (-1.11) |
| GROUP | 0.13 | -0.06 | 0.28* | -0.26 | -0.01 | 0.07 |
| | (0.91) | (-0.40) | (1.66) | (-1.49) | (-0.06) | (0.50) |
| PYRAMID | -0.52*** | 0.02 | -0.27 | 0.18 | -0.15 | -0.43** |
| | (-2.80) | (0.09) | (-1.29) | (0.78) | (-0.80) | (-2.24) |
| DEV | 1.19** | 1.48** | 1.79*** | 0.47 | 1.54*** | 1.00 |
| | (1.99) | (2.31) | (2.54) | (0.66) | (2.51) | (1.62) |
| CV | -0.13 | -0.06 | 0.34 | -0.36 | -0.30 | 0.02 |
| | (-0.30) | (-0.11) | (0.67) | (-0.62) | (-0.64) | (0.05) |
| DEV*CV | -1.69*** | -1.23* | -1.99*** | -0.15 | -1.63*** | -1.05 |
| | (-2.53) | (-1.74) | (-2.54) | (-0.19) | (-2.38) | (-1.53) |
| Pseudo R2 | 0.07 | 0.09 | 0.09 | 0.10 | 0.07 | 0.10 |
| Observations | 1574 | 1545 | 1166 | 1172 | 1530 | 1589 |
| Chi-square | 122.51 | 155.91 | 117.50 | 132.03 | 114.19 | 174.19 |
| Degree of Freedom | 22 | 22 | 22 | 22 | 22 | 22 |
| P-value | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |

Model specification: $AUDITOR_{it} = a_0 + a_1 SIZE_{it} + a_2 LEV_{it} + a_3 GROUP_i + a_4 PYRAMID_i + a_5 DEV_i + a_6 CV_i + a_7 DEV_i{}^*CV_i + a_8$ fixed effects + $u_{it}$
Variable definitions: $AUDITOR$ = 1 when auditor is a Big Five accounting firm, and 0 otherwise; $SIZE_{it}$ = natural logarithm of total assets in millions of U.S. dollars at the end of year t; $LEV_{it}$ = long-term debt divided by total assets at the end of year t; $GROUP_i$ = 1 when the client firm is a member of a corporate group, and 0 otherwise; $PYRAMID_i$ = 1 when the client firm is controlled by an affiliated firm through a stock pyramid, and 0 otherwise; $DEV_i$ = 1 when the percentage of voting rights possessed by the largest ultimate owner of the firm exceeds the median in the corresponding economy, and 0 otherwise; $CV_i$ = the ratio of cash flow rights to voting rights of the largest ultimate owner; Fixed effects = dummy variables controlling for fixed effects of industries, calendar years and economies. For simplicity, results for the fixed effects are not reported.
Sample: The sample includes 3,119 firm-year observations, spanning between 1994 and 1996 covering Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. To be included in the sample, a firm must have at least one year of financial data and its auditor identity from Worldscope, and its ultimate ownership data must be available from Claessens, Djankov, and Lang (2000).
[a] The LOGIT regressions are run pooling across economies and years from 1994 to 1996.
[b] The sample is classified into high (low) subgroup when the partitioning variable of that year is higher than or equal to (lower than) its corresponding three-year median of the economy. The partitioning variable for profitability is net income over total assets, for leverage is total liabilities over total assets and firm size is total assets.
***, **, and * denote 1%, 5% and 10% 2-tailed test.

To examine further if the reported effect of the agency problem on the demand for Big Five auditors clusters in particular economies, we re-estimate the LOGIT regression economy by economy. As shown in Table 7, the ownership results are consistent with the alternative of *H1* in several economies, though not clustering in any single economy. The effect of concentration of ownership *(DEV)* on the demand for Big Five auditors is positive in Hong Kong, Malaysia, and the Philippines. The effect of *CV* is negative for South Korea, while the joint effect of *DEV* and *CV* is negative for Hong Kong, Malaysia and the Philippines. It is interesting to note that the association between our measure of agency conflicts and the preference for Big Five auditors is also found in South Korea, where there are only Big Five-affiliated auditors, suggesting that Big Five-affiliated auditors may also provide quality-differentiated audits to mitigate agency problems.

As a diagnostic check, we examine, economy by economy, whether the agency problem affects the choice between non-Big Five auditors and the Big Five auditor that has the largest market share in the economy. The market share of each Big Five auditor is computed based on the auditor's total number of clients divided by the number of listed firms in our sample.[17] If the Big Five market leader commands the best reputation in the economy, excluding Big Five non-market leaders from our economy-by-economy regressions would increase the power of the test. This conjecture is confirmed by our results that *DEV* is positive and significant in all the economies in our study but Indonesia, South Korea and Thailand, while *DEV\*CV* is negative and significant in all the economies but Indonesia and Thailand.[18] The insignificant results in Indonesia and Thailand suggest that the choice of external auditors is insensitive to their firms' agency problem. One possible explanation is that external auditors may not be fulfilling a strong monitoring role in these two economies where the demand and supply of good quality auditors are the weakest.[19] Since Indonesia and Thailand are considered to have weaker legal environments than the rest of the East Asian economies in our sample, the result here is consistent with Choi and Wong (2002) and Francis et al. (2002) that the demand for Big 5 service is lower among weak than strong legal environment countries.

In summary, we find that East Asian corporations whose ultimate owners possess high voting control and have a large divergence of control and ownership rights are more likely to employ Big Five auditors. This result supports the view that external auditors mitigate the agency conflicts between controlling owners and outside investors in this region. However, the economy-by-economy results indicate that the choice of auditor is insensitive to the agency problem in Indonesia and Thailand, which may suggest that external auditors do not perform such a role in these economies.

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[17] *We also consider Price Waterhouse, and Coopers and Lybrand as two separate firms in this analysis because they are not yet merged into one firm during our sample period. The results of treating these two firms as one or two separate firms are qualitatively similar.*

[18] *This result also suggests that the insignificant coefficients of DEV and DEV\*CV for Singapore in Table 7 are caused by the weak power of the test. Also, a firm-by-firm check reveals that among the sampled Singaporean firms, 21 firms hire local auditors. Of the 21 firms, 15 firms display control-ownership divergence (CV<1). However, only 6 of the 21 firms display excess control (DEV=1) and only 3 firms display both excess control and control-ownership divergence to the point of serious agency conflicts. These statistics suggest that the overall agency problem of the firms that hire local auditors is not substantial enough to support the null of H1.*

[19] *A possible alternative explanation is that Big Five auditors are not better in quality in Indonesia and Thailand.*

**Table 7**
**LOGIT Regression Results of Auditor Choice by Economy[a]**

| | Hong Kong | Indonesia | Malaysia | The Philippines | Singapore | South Korea | Taiwan | Thailand |
|---|---|---|---|---|---|---|---|---|
| Intercept | 3.57*** | -0.71 | 3.54*** | -1.91 | -7.14*** | -5.22*** | -0.71 | -1.37 |
| | (2.35) | (-0.34) | (2.42) | (-0.78) | (-3.33) | (-2.90) | (-0.35) | (-0.82) |
| SIZE | -0.14** | 0.31** | -0.08 | -0.29** | 0.67*** | 0.48*** | 0.11 | -0.04 |
| | (-1.96) | (2.10) | (-1.08) | (-1.97) | (4.51) | (5.61) | (1.02) | (-0.45) |
| LEV | -0.15 | 0.46 | 0.69 | 1.13 | -3.68*** | 0.68 | -0.13 | -0.52 |
| | (-0.15) | (0.34) | (0.73) | (0.62) | (-2.75) | (1.37) | (-0.08) | (-0.65) |
| GROUP | -0.61*** | -0.00 | 0.57** | 1.01** | 0.79 | -0.15 | 0.16 | -0.14 |
| | (-2.52) | (-0.01) | (1.97) | (2.10) | (1.57) | (-0.63) | (0.52) | (-0.51) |
| PYRAMID | -1.06** | 0.52 | -0.74** | -0.88* | -0.82 | -0.48 | 0.13 | -0.38 |
| | (-1.98) | (0.92) | (-2.08) | (-1.88) | (-1.49) | (-1.61) | (0.25) | (-0.80) |
| DEV | 2.86*** | -1.78 | 7.77*** | 10.24** | 1.17 | -1.01 | -4.09 | 0.73 |
| | (3.11) | (-1.24) | (2.77) | (2.12) | (0.70) | (-0.90) | (-1.60) | (0.39) |
| CV | -0.54 | -1.45 | 0.32 | 2.50** | 2.40*** | -3.65*** | -0.77 | 0.95 |
| | (-0.46) | (-1.03) | (0.36) | (2.00) | (2.39) | (-3.74) | (-0.63) | (0.73) |
| DEV*CV | -3.34*** | 2.15 | -8.04*** | -9.78** | -2.36 | 1.52 | 3.73 | -1.03 |
| | (-3.27) | (1.28) | (-2.75) | (-1.96) | (-1.18) | (1.20) | (1.34) | (-0.53) |
| Pseudo R2 | 0.08 | 0.08 | 0.09 | 0.32 | 0.10 | 0.13 | 0.12 | 0.08 |
| Observations | 651 | 309 | 411 | 204 | 410 | 591 | 223 | 320 |
| Chi-square | 54.63 | 27.13 | 39.07 | 96.78 | 44.45 | 90.97 | 29.96 | 26.25 |
| Degree of Freedom | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| P-value | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |

*Model specification:* $AUDITOR_{it} = a_0 + a_1 SIZE_{it} + a_2 LEV_{it} + a_3 GROUP_i + a_4 PYRAMID_i + a_5 DEV_i + a_6 CV_i + a_7 DEV_i*CV_i + a_8$ fixed effects $+ u_{it}$
*Variable definitions:* AUDITOR = 1 when auditor is a Big Five accounting firm, and 0 otherwise; $SIZE_{it}$ = natural logarithm of total assets in millions of U.S. dollars at the end of year t; $LEV_{it}$ = long-term debt divided by total assets at the end of year t; $GROUP_i$ = 1 when the client firm is a member of a corporate group, and 0 otherwise; $PYRAMID_i$ = 1 when the client firm is controlled by an affiliated firm through a stock pyramid, and 0 otherwise; $DEV_i$ = 1 when the percentage of voting rights possessed by the largest ultimate owner of the firm exceeds the median in the corresponding economy, and 0 otherwise; $CV_i$ = the ratio of cash flow rights to voting rights of the largest ultimate owner; Fixed effects = dummy variables controlling for fixed effects of industries and calendar years. For simplicity, results for the fixed effects are not reported.
*Sample:* The sample includes 3,119 firm-year observations, spanning between 1994 and 1996 covering Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. To be included in the sample, a firm must have at least one year of financial data and its auditor identity from Worldscope, and its ultimate ownership data must be available from Claessens, Djankov, and Lang (2000).
[a] The LOGIT regressions are run economy by economy pooling across years from 1994 to 1996.
***, **, and * denote 1%, 5% and 10% 2-tailed test.

**Audit fee**

To test our second hypothesis that the audit fee reflects a client firm's agency problem, we run the following pooled time-series cross-sectional ordinary least squares regression:

$$FEE_{it} = b_0 + b_1 \, SIZE_{it} + b_2 \, ROA_{it} + b_3 \, LEV_{it} + b_4 \, CACL_{it} + b_5 \, AR_{it} + b_6 \, INV_{it}$$
$$+ b_7 \, GROUP + b_8 \, PYRAMID + b_9 \, DEV_i + b_{10} \, CV_i + b_{11} \, DEV_i{}^*CV_i$$
$$+ b_{12} \, \text{fixed effects} + u_{it}$$

where, for sample firm $i$ ,

$FEE_{it}$      = the natural log of total audit fees at year $t$;
$SIZE_{it}$ = the natural logarithm of total assets in millions of U.S. dollars at the end of year $t$;
$ROA_{it}$ = the net income divided by total assets at the end of year $t$;
$LEV_{it}$ = the long-term debt divided by total assets at the end of year $t$;
$CACL_{it}$ = the current assets divided by current liabilities at the end of year $t$;
$AR_{it}$ = the accounts receivable divided by total assets at the end of year $t$;
$INV_{it}$ = inventory divided by total assets at the end of year $t$;
$GROUP_i$ = 1 when the client firm is a member of a corporate group, and 0 otherwise;
$PYRAMID_i$ = 1 when the client firm is controlled by an affiliated firm through a stock pyramid, and 0 otherwise;
$DEV_i$ = 1 when the percentage of voting rights possessed by the largest ultimate owner of the firm exceeds the median in the corresponding economy, and 0 otherwise;
$CV_i$ = the ratio of cash flow rights to voting rights of the largest ultimate owner;
Fixed effects = dummy variables controlling for fixed effects of industries, calendar years and economies;
$u_{it}$ = an error term at year $t$.

Consistent with prior studies such as those by Simunic (1980) and Francis (1984), we use a number of variables to control for (1) loss exposure attributable to the audit and (2) loss risk borne by the auditor. The level of loss exposure is estimated by total asset size (*SIZE*), asset composition as measured by the percentage of inventory and accounts receivable in total assets (*INV* and *AR*), and organizational complexity.  The literature typically uses the number of domestic and foreign subsidiaries as a proxy for organizational complexity, which is not available in Worldscope. However, the amount of audit effort should be associated with two of our organizational complexity variables: corporate group membership (*GROUP*) and if the firm is on the bottom of a stock pyramid (*PYRAMID*). We expect that the amount of consolidation work increases when the firm belongs to a corporate group (*GROUP = 1*) and is on the top layers of the stock pyramid with many subsidiaries (*PYRAMID = 0*). The loss risk borne by the auditor is represented by the auditee's liquidity ratio (*CACL*), debt-asset ratio (*LEV*) and profitability (*ROA*).

Table 8 presents the pooled-economy and the economy-by-economy regression results for Hong Kong, Malaysia and Singapore, where reporting of audit fees is mandatory. Consistent with prior research, the audit fee is significantly and positively related to loss exposure and audit risk. More specifically, consistent with the notion that the audit fee is a function of the complexity of the audit, the coefficients of auditee size, percentage of accounts receivable and inventory in total assets, and group affiliation are positive and statistically significant in the pooled-economy and economy-by-economy regressions, with the exception that the coefficient of *INV,* which is not statistically significant for Malaysia, and the coefficient of

*GROUP*, which is not statistically significant for Hong Kong. In addition, audit risk as proxied by the auditee's *ROA* is significantly negatively related to the audit fee in the pooled-economy regression, as well as in the Hong Kong and Malaysia regressions.

Consistent with the alternative of *H1*, we find that the coefficient of *DEV* is positive and statistically significant and the coefficient of *DEV\*CV* is negative and statistically significant in the pooled regression as well as in the Hong Kong and Singapore regressions. When the pooled-economy regression is run separately using Big Five and non-Big Five samples, the coefficient of *DEV* is significantly positive and the coefficient of *DEV\*CV* is significantly negative only in the Big Five regression. This suggests that Big Five auditors charge a premium to firms with agency problems as captured by the ownership variables, but non-Big Five auditors do not. Thus, pooling Big Five and non-Big Five clients in our regression weakens the ownership results.

**Table 8**
**Ordinary Least Squares Regression Results of Audit Fee**

| | Pooled sample[a] | Hong Kong[b] | Malaysia[c] | Singapore[d] | Firms hiring Big Five auditors[e] | Firms hiring non-Big Five auditors[f] |
|---|---|---|---|---|---|---|
| Intercept | -2.44*** | -1.67*** | -4.00*** | -2.99*** | -2.27*** | -3.08*** |
| | (-9.29) | (-3.45) | (-7.58) | (-6.45) | (-6.92) | (-4.33) |
| SIZE | 0.59*** | 0.52*** | 0.65*** | 0.59*** | 0.59*** | 0.64*** |
| | (39.03) | (21.37) | (21.59) | (20.37) | (31.55) | (15.45) |
| ROA | -0.75*** | -0.69*** | -0.84* | -0.81 | -1.14*** | -0.26 |
| | (-4.47) | (-3.80) | (-1.79) | (-1.57) | (-5.67) | (-0.61) |
| LEV | 0.09 | 0.54** | -0.08 | 0.34 | 0.01 | 0.16 |
| | (0.56) | (2.01) | (-0.29) | (1.16) | (0.04) | (0.34) |
| CACL | -0.03 | -0.01 | -0.08** | 0.02 | -0.03 | 0.10* |
| | (-1.32) | (-0.18) | (-2.07) | (0.55) | (-1.36) | (1.70) |
| AR | 1.04*** | 0.82*** | 1.03*** | 0.85*** | 0.93*** | 0.84** |
| | (6.92) | (3.72) | (3.49) | (2.99) | (5.14) | (2.17) |
| INV | 1.01*** | 1.00*** | 0.40 | 1.45*** | 1.38*** | 0.07 |
| | (6.40) | (4.51) | (1.19) | (4.76) | (6.82) | (0.21) |
| GROUP | 0.11*** | 0.01 | 0.17* | 0.20** | 0.14*** | -0.04 |
| | (2.36) | (0.10) | (1.86) | (2.00) | (2.54) | (-0.37) |
| PYRAMID | -0.09 | -0.09 | 0.02 | -0.26*** | -0.13 | -0.09 |
| | (-1.52) | (-0.67) | (0.15) | (-2.54) | (-1.62) | (-0.58) |
| DEV | 0.30** | 0.47* | -1.02*** | 0.91*** | 0.40** | -0.17 |
| | (1.96) | (1.82) | (-2.76) | (2.71) | (2.11) | (-0.39) |
| CV | 0.21 | 0.12 | 0.17 | 0.28 | 0.18 | 0.18 |
| | (1.48) | (0.36) | (0.58) | (1.42) | (0.96) | (0.57) |
| DEV*CV | -0.31* | -0.47* | 1.14*** | -1.06*** | -0.40* | 0.14 |
| | (-1.78) | (-1.69) | (2.71) | (-2.63) | (-1.85) | (0.29) |
| Adjusted R2 | 0.68 | 0.54 | 0.64 | 0.56 | 0.67 | 0.74 |
| Observations | 1304 | 534 | 369 | 401 | 889 | 179 |

*Table 8 (continued)*

*Model specification:* $FEE_{it} = b_0 + b_1 SIZE_{it} + b_2 ROA_{it} + b_3 LEV_{it} + b_4 CACL_{it} + b_5 AR_{it} + b_6 INV_{it} + b_7 GROUP + b_8 PYRAMID + b_9 DEV_i + b_{10} CV_i + b_{11} DEV_i^* CV_i + b_{12}$ fixed effects $+ u_{it}$

*Variable definitions:* $FEE_{it}$ = natural log of total audit fees at year t; $SIZE_{it}$ = natural logarithm of total assets in millions of U.S. dollars at the end of year t; $ROA_{it}$ = net income divided by total assets at the end of year t; $LEV_{it}$ = long-term debt divided by total assets at the end of year t; $CACL_{it}$ = current assets divided current liabilities at the end of year t; ARit = accounts receivable divided total assets at the end of year t; $INV_{it}$ = inventory divided total assets at the end of year t; $GROUP_i$ = 1 when the client firm is a member of a corporate group, and 0 otherwise; $PYRAMID_i$ = 1 when the client firm is controlled by an affiliated firm through a stock pyramid, and 0 otherwise; $DEV_i$ = 1 when the percentage of voting rights possessed by the largest ultimate owner of the firm exceeds the median in the corresponding economy, and 0 otherwise; $CV_i$ = the ratio of cash flow rights to voting rights of the largest ultimate owner; Fixed effects = dummy variables controlling for fixed effects of industries, calendar years and economies when appropriate. For simplicity, results for the fixed effects are not reported.

*Sample:* The sample includes 1,304 firm-year observations, spanning between 1994 and 1996 covering Hong Kong, Malaysia and Singapore. To be included in the sample, a firm must have at least one year of financial data and audit fee from Worldscope, and its ultimate ownership data must be available from Claessens, Djankov, and Lang (2000).

[a] This is a pooled time-series cross-sectional OLS regression that uses the entire sample of 1,304 firm-year observations, spanning between 1994 and 1996 covering the three economies.

[b] This is a pooled time-series cross-sectional OLS regression that uses the Hong Kong sample of 534 firm-year observations, spanning between 1994 and 1996.

[c] This is a pooled time-series cross-sectional OLS regression that uses the Malaysia sample of 369 firm-year observations, spanning between 1994 and 1996.

[d] This is a pooled time-series cross-sectional OLS regression that uses the Singapore sample of 401 firm-year observations, spanning between 1994 and 1996.

[e] This is a pooled time-series cross-sectional OLS regression that uses the Big Five clients of 889 firm-year observations in the sample, spanning between 1994 and 1996 covering the three economies.

[f] This is a pooled time-series cross-sectional OLS regression that uses the non-Big Five clients of 179 firm-year observations in the sample, spanning between 1994 and 1996 covering the three economies.

***, **, and * denote 1%, 5% and 10% 2-tailed test.

We note that the coefficients of *DEV* and *DEV*CV* for Malaysia are statistically significant but with opposite signs to those of Hong Kong and Singapore. This suggests that Hong Kong and Singapore auditors charge a premium while Malaysian auditors charge a discount, if the controlling owner of the client firm possesses effective control and has a large divergence between control and ownership. Regulations in the audit market may explain why audit fees in Malaysia fail to reflect agency problems as predicted by the positive view.[20] In contrast to Hong Kong and Singapore, where the auditor markets are more internationalized and less regulated, Malaysia has an emerging audit market subject to fee regulations, which may give rise to the different fee structure. There is a smaller presence of Big Five auditors in Malaysia as is evident in our sample in which the average Big Five market share for Malaysia is 74%, which is significantly less than for Hong Kong with 80.6% and for Singapore with 88.3% (Table 1). This lower demand for quality auditors could be driven by the Malaysian government's policies that discourage international investors' involvement in its stock market[21]. This is consistent with the results in Table 3 that Malaysian corporations incur the least in both dollar value and percentage of total assets of audit fees. Also consistent with the effect of the fee regulation, we find that Big Five auditors charge a fee premium in Hong Kong and Singapore, but not in Malaysia, which is also documented by Simon et al. (1992).

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[20] *Fee regulation is not uncommon in East Asia. The Malaysian Institute of Accountants sets fee guidelines for their members. The Korean Institute of Certified Public Accountants also sets fee guidelines based on clients' total asset size.*

[21] *Malaysia has a 30% limit on the total direct investment by foreign individuals and institutions in a company. Singapore has some limits on foreign direct investment only in strategic industries, while Hong Kong does not have any restrictions. Also, foreign securities firms can only operate as joint venture firms with local partners in Malaysia. There is no such requirement in Hong Kong and Singapore.*

As in the previous auditor choice analysis, we perform a further regression analysis of audit fees using sub-samples partitioned by profit, size, and leverage. In Table 9, we find that the coefficient of *DEV* is significantly positive for low profit, small, and high-leverage clients. The coefficient of *DEV*CV* is significantly negative in the regressions for small and high-leverage clients. In contrast, none of the coefficients of the ownership variables is statistically significantly different from zero for high-profit, large, or low-leverage clients. Overall, these results are consistent with the hypothesis that audit fee premiums reflect the degrees of agency conflicts between controlling owners and outside investors.

### Table 9
### Ordinary Least Squares Regression Results of Audit Fee by Profitability, Leverage, and Firm Size Partitions[a]

|  | Low profit firmsb | High profit firms | High leverage firmsb | Low leverage firms | Small firmsb | Large firms |
|---|---|---|---|---|---|---|
| Intercept | -2.13*** | -2.53*** | -2.02*** | -2.96*** | -2.10*** | -3.07*** |
|  | (-5.58) | (-6.65) | (-5.40) | (-8.00) | (-5.03) | (-5.56) |
| SIZE | 0.60*** | 0.58*** | 0.60*** | 0.61*** | 0.56*** | 0.65*** |
|  | (27.34) | (26.62) | (26.47) | (29.47) | (18.01) | (19.05) |
| ROA | -0.80*** | -0.48* | -0.43* | -1.07*** | -0.48*** | -1.41*** |
|  | (-3.03) | (-1.66) | (-1.77) | (-4.60) | (-2.73) | (-3.23) |
| LEV | -0.26 | 0.74*** | -0.08 | -0.25 | 0.19 | -0.22 |
|  | (-1.40) | (2.84) | (-0.44) | (-0.66) | (1.05) | (-0.89) |
| CACL | -0.00 | -0.03 | -0.08 | 0.00 | -0.08*** | 0.04 |
|  | (-0.08) | (-1.26) | (-1.63) | (0.01) | (-3.27) | (1.31) |
| AR | 1.50*** | 0.63*** | 0.61*** | 1.21*** | 0.46*** | 1.89*** |
|  | (6.75) | (3.06) | (2.90) | (4.39) | (2.65) | (6.62) |
| INV | 0.37 | 1.56*** | 0.33 | 1.94*** | 0.89*** | 1.24*** |
|  | (1.62) | (7.17) | (1.52) | (7.12) | (4.89) | (4.26) |
| GROUP | 0.01* | 0.16*** | 0.12* | 0.10* | 0.04 | 0.09 |
|  | (0.08) | (2.62) | (1.93) | (1.65) | (0.72) | (1.23) |
| PYRAMID | -0.17** | -0.03 | -0.19** | 0.03 | 0.01 | -0.16 |
|  | (-1.94) | (-0.38) | (-2.31) | (0.32) | (0.16) | (-1.55) |
| DEV | 0.38* | 0.27 | 0.50** | 0.11 | 0.49*** | 0.06 |
|  | (1.67) | (1.24) | (2.26) | (0.50) | (2.54) | (0.23) |
| CV | 0.00 | 0.31 | 0.33* | 0.20 | 0.31 | 0.19 |
|  | (0.02) | (1.43) | (1.78) | (0.93) | (1.62) | (0.91) |
| DEV*CV | -0.38 | -0.28 | -0.61*** | -0.03 | -0.47** | -0.20 |
|  | (-1.49) | (-1.14) | (-2.45) | (-0.13) | (-2.14) | (-0.71) |
| Adjusted R2 | 0.70 | 0.68 | 0.65 | 0.73 | 0.67 | 0.56 |
| Observations | 591 | 713 | 658 | 646 | 740 | 564 |

**Table 9 (continued)**

*Model specification:* $FEE_{it} = b_0 + b_1 SIZE_{it} + b_2 ROA_{it} + b_3 LEV_{it} + b_4 CACL_{it} + b_5 AR_{it} + b_6 INV_{it} + b_7 GROUP + b_8$
$PYRAMID + b_9 DEV_i + b_{10} CV_i + b_{11} DEV_i {}^* CV_i + b_{12}$ fixed effects $+ u_{it}$
*Variable definitions:* $FEE_{it}$ = natural log of total audit fees at year t; SIZEit = natural logarithm of total assets in millions of U.S. dollars at the end of year t; ROAit = net income divided by total assets at the end of year t; $LEV_{it}$ = long-term debt divided by total assets at the end of year t; $CACL_{it}$ = current assets divided current liabilities at the end of year t; $AR_{it}$ = accounts receivable divided total assets at the end of year t; $INV_{it}$ = inventory divided total assets at the end of year t; $GROUP_i$ = 1 when the client firm is a member of a corporate group, and 0 otherwise; $PYRAMID_i$ = 1 when the client firm is controlled by an affiliated firm through a stock pyramid, and 0 otherwise; $DEV_i$ = 1 when the percentage of voting rights possessed by the largest ultimate owner of the firm exceeds the median in the corresponding economy, and 0 otherwise; $CV_i$ = the ratio of cash flow rights to voting rights of the largest ultimate owner; Fixed effects = dummy variables controlling for fixed effects of industries, calendar years and economies. For simplicity, results for the fixed effects are not reported.
*Sample:* The sample includes 1,304 firm-year observations, spanning between 1994 and 1996 covering Hong Kong, Malaysia and Singapore. To be included in the sample, a firm must have at least one year of financial data and audit fee from Worldscope, and its ultimate ownership data must be available from Claessens, Djankov, and Lang (2000).
[a] The OLS regressions are run pooling across economies and years from 1994 to 1996.
[b] The sample is classified into high (low) subgroup when the partitioning variable of that year is higher than or equal to (lower than) its corresponding three-year median of the economy. The partitioning variable for profitability is net income over total assets, for leverage is total liabilities over total assets and firm size is total assets.
***, **, and * denote 1%, 5% and 10% 2-tailed test.

In summary, the results from the audit fee analysis show that in Hong Kong and Singapore, auditors, specifically Big Five auditors, charge a premium for clients' agency problems as measured by their ultimate owners' control concentration and separation of control and ownership. This lends further support for the view that auditors alleviate agency conflicts in East Asia.

## Audit opinion

Finally, to test our last hypothesis that low earnings will more likely trigger a modified opinion for firms with large agency problems than for firms with small agency problems, we run the following pooled time-series cross-sectional LOGIT regression:

$$OPINION_{it} = b_0 + b_1 SIZE_{it} + b_2 ROA_{it} + b_3 LEV_{it} + b_4 CACL_{it} + b_5 AR_{it} + b_6 INV_{it}$$
$$+ b_7 GROUP + b_8 PYRAMID + b_9 DCV_i + b_{10} DCV_i {}^* ROA_{it}$$
$$+ \text{fixed effects} + u_{it}$$

where, for sample firm i and year t,
$OPINION_{it}$ = 1 when it is a modified opinion, and 0 otherwise;
$DCV_{it}$ = 1 when the ultimate control exceeds ownership rights ($CV_{it} < 1$), and 0 otherwise; and the other variables are defined earlier.

In this analysis, we use only a dummy variable, *DCV*, to capture agency conflicts. As there are a total of only 49 modified opinions in the sample, employing both of the ownership variables is implausible. We also do not include lagged opinions as independent variables because that would further reduce the number of modified opinions in each of our sample years.

The regression results presented in Table 10 suggest that the modified opinions are significantly negatively associated with firm profitability (*ROA*) for the whole sample and for both the Big Five and non-Big Five client samples. However, the other audit risk variables,

*CACL* and *LEV*, cannot significantly explain audit opinions, with the exception that *LEV* is positively associated with modified opinions in the non-Big Five regression. This is consistent with the audit fee results that among the audit risk variable, only *ROA* is significantly negatively associated with audit fees. The asset composition and organization complexity variables seem to give surprising results. The coefficients of *GROUP* and *AR* are negative and statistically significant in all three regressions, differing from prior predictions. Membership in a corporate group may reduce the propensity for getting modified opinions if group firms manage to reduce bankruptcy risk using related-party transactions as cross-subsidies. Also, *ROA* is positively correlated with *AR*, which may have induced multicollinearity between the two variables. Consistent with this conjecture, when the regression is separately estimated using high and low profitability samples, a procedure used in the auditor choice and audit fee regressions, the coefficient of AR becomes statistically insignificant in both samples. Finally, the coefficient of *DCV\*ROA* is negative and statistically significant for the whole sample and the Big Five sample regressions, but not for the non-Big Five sample regressions.

The whole sample and the Big Five sample results are consistent with *H3* that low earnings would more easily trigger a modified opinion for auditees with divergence of control and ownership. When taking the audit fee and opinion results together, we find that Big Five auditors take into consideration their auditee's ownership structure in setting audit prices and issuing modified opinions, while non-Big Five auditors do not.

Since Table 2 shows that modified opinions are not evenly distributed across the economies, we perform two diagnostic analyses. We repeat the regressions in Table 10 by dropping Indonesia, which had no modified opinion from 1994 to 1996, and the results remain qualitatively the same. In addition, Table 2 shows that in 1995 and 1996, there were considerably more modified opinions in Thailand with 15 (19.7%) in 1995 and 11 (13.4%) in 1996. The regression results in Table 10 also remain unchanged when both Indonesia and Thailand are dropped from the sample.

**Table 10**
**Logit Regression Results of Audit Opinion**

| | Pooled sample[a] | Firms hiring BigFive auditors[b] | Firms hiring non-Big Five auditors[c] |
|---|---|---|---|
| Intercept | -5.35*** | -4.52* | -5.72 |
| | (-2.68) | (-1.73) | (-0.67) |
| SIZE | 0.08 | 0.01 | -0.59 |
| | (0.56) | (0.06) | (-1.16) |
| ROA | -6.73*** | -6.26*** | -19.98** |
| | (-4.96) | (-3.50) | (-2.02) |
| LEV | -1.11 | -1.63 | 7.64* |
| | (-1.23) | (-1.36) | (1.84) |
| CACL | -0.03 | -0.02 | -0.10 |
| | (-0.67) | (-0.43) | (-0.58) |
| AR | -3.94** | -3.48* | 4.44 |
| | (-2.30) | (-1.72) | (-0.84) |
| INV | -0.84 | 0.21 | 3.70 |
| | (-0.62) | (0.11) | (1.17) |
| GROUP | -1.00*** | -1.61*** | -2.37* |
| | (-2.41) | (-2.75) | (-1.89) |
| PYRAMID | 0.51 | -0.19 | 2.81* |
| | (0.85) | (-0.24) | (1.79) |
| DCV | -0.69 | 0.42 | -8.63 |
| | (-1.02) | (0.54) | (-0.17) |
| DCV*ROA | -9.86*** | -9.68*** | 0.63 |
| | (-2.76) | (-2.69) | (0.00) |
| Pseudo R2 | 0.07 | 0.06 | 0.14 |
| Observations | 2335 | 1758 | 577 |
| Chi-square | 173.55 | 115.39 | 96.43 |
| Degree of Freedom | 25 | 25 | 25 |
| P-value | 0.0001 | 0.0001 | 0.0001 |

*Model specification:* $OPINION_{it} = b_0 + b_1 SIZE_{it} + b_2 ROA_{it} + b_3 LEV_{it} + b_4 CACL_{it} + b_5 AR_{it} + b_6 INV_{it} + b_7 GROUP + b_8 PYRAMID + b_9 DCV_i + b_{10} DCV_i *ROA_{it}$ + fixed effects + $u_{it}$

*Variable definitions:* $OPINION_{it}$ = 1 when it is a modified opinion, and 0 otherwise; $SIZE_{it}$ = natural logarithm of total assets in millions of U.S. dollars at the end of year t; $ROAit$ = net income divided by total assets at the end of year t; $LEV_{it}$ = long-term debt divided by total assets at the end of year t; $CACL_{it}$ = current assets divided current liabilities at the end of year t; $AR_{it}$ = accounts receivable divided total assets at the end of year t; $INV_{it}$ = inventory divided total assets at the end of year t; $GROUPi$ = 1 when the client firm is a member of a corporate group, and 0 otherwise; $PYRAMID_j$ = 1 when the client firm is in the bottom of the pyramid, and 0 otherwise; $DCV_i$ = 1 when the ratio of cash flow rights to voting rights of the largest ultimate owner is less than 1, and 0 otherwise;   Fixed effects = dummy variables controlling for fixed effects of industries, calendar years and economies; For simplicity, results for the fixed effects are not reported.

*Sample:* The sample includes 2,335 firm-year observations, spanning between 1994 and 1996 covering Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan and Thailand. To be included in the sample, a firm must have at least one year of financial data and an audit opinion from Worldscope, and its ultimate ownership data must be available from Claessens, Djankov, and Lang (2000).

[a] This is a LOGIT regression that uses the entire sample of 2,335 firm-year observations, spanning between 1994 and 1996 covering the eight economies.

[b] This is a LOGIT regression that uses the Big Five clients of 1,758 firm-year observations in the sample, spanning between 1994 and 1996 covering the eight economies.

[c] This is a LOGIT regression that uses the non-Big Five clients of 577 firm-year observations in the sample, spanning between 1994 and 1996 covering the eight economies.

***, **, and * denote 1%, 5% and 10% 2-tailed test.

In summary, the results from the audit opinion regressions indicate that Big Five auditors in East Asia are more stringent on clients with agency problems. This evidence corroborates earlier fee premium results that Big Five auditors fulfill the monitoring role by exerting greater auditing effort on firms subject to agency conflicts.

## CONCLUSION

The concentrated ownership of East Asian corporations gives rise to conflicts of interest between controlling owners and minority shareholders. One big concern about containing the controlling owners' self-interested activities is that conventional internal and external governance mechanisms such as boards of directors and takeover markets are typically weak when corporate ownership is concentrated as in East Asia. To mitigate this agency problem, theory suggests that the controlling owners may find ways to employ credible bonding mechanisms to assure the minority shareholders that their interests would be protected. We examine if external independent auditors play this role in East Asia.

We find that in East Asia, firms subject to greater agency conflicts, indicated by their high control concentration and a large separation of control and ownership, are more likely to hire Big Five auditors than firms subject to less agency problems. We further find that the auditee's ownership structure is associated with its choice of auditor only among small and high-risk auditees, whose threat of expropriation by ultimate owners is high, but not among large and low-risk auditees whose threat of expropriation is low. Our results also show that Big Five auditors take into consideration their auditees' ownership structure when making pricing and opinion decisions, while non-Big Five auditors do not. More specifically, Big Five auditors charge a fee premium to clients with controlling owners who enjoy effective control but actually owning a small stake in the firm. Also, poor earnings can more likely trigger Big Five auditors to issue a modified opinion of their clients with large agency problems, which suggests that Big Five auditors lower the modification threshold as their clients' agency problems increase. The overall evidence lends support to the agency theory and suggests that auditors play a crucial monitoring role to mitigate agency problems in emerging markets.

This paper contributes to the corporate governance literature by linking the corporate ownership structure with mandatory external audits in the context of emerging markets. It provides evidence of how firms' agency conflicts between majority and minority shareholders affect their choice of auditors and of the auditors' decisions on audit fees and audit opinions. Analyzing auditor types, fees and opinions allows us to use these quantifiable measures to capture the quality of a corporate governance mechanism used by a firm. From the policy perspective, this study sheds light on the question of whether or not voluntary governance mechanisms were at work prior to the Asian Financial Crisis.

Future research could examine other corporate governance mechanisms in emerging markets. Potential candidates could include institutional owners, financial analysts, and prominent directors. Such research will not only complement existing research that mostly focuses on developed economies but also provide policy suggestions to firms and governments in emerging markets that are striving to reform their corporate governance.

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