The role of the audit committee and the informativeness of accounting earnings in East Asia

Tracie Woidtke [a], Yin-Hua Yeh [b],*

[a] Department of Finance, Corporate Governance Center, University of Tennessee, United States
[b] Graduate Institute of Finance, National Chiao Tung University, 1001 Ta-Hsueh Rd., Hsinchu City, Taiwan 30010

ARTICLE INFO

ABSTRACT

Policy makers around the world have focused on corporate governance reform since the Asian financial crisis and scandals in the United States such as the Enron debacle. In particular, policy makers have focused on the establishment of independent audit committees to improve investor confidence in reported accounting information. In a sample of East Asian companies, we find that the negative relation between concentrated control and earnings informativeness that was documented prior to the Asian financial crisis persists in a more recent period, even though many corporate governance reforms have been adopted since the crisis to improve financial disclosure. We do, however, find that earnings informativeness is strengthened by both fully independent audit committees and audit committees with a majority of independent directors with accounting financial or legal expertise. In addition, the increased reliability that is associated with these audit committee characteristics appears to more than offset the detrimental effect that is associated with concentrated control. The results in this paper suggest that an emphasis on audit committee independence alone may not be enough to enhance earnings informativeness. Instead, focusing on both complete independence and the financial or legal expertise of independent directors who are appointed to the audit committee may be a more fruitful way to increase investor confidence in accounting information, especially when ownership is concentrated.

© 2012 Elsevier B.V. All rights reserved.

1. Introduction

The prevalence of concentrated ownership of East Asian companies (Claessens et al., 2000) has led to the belief that controlling shareholders have opportunistic incentives to take advantage of weak domestic

---

* Corresponding author. Tel.: +886 3 513 1294.
  E-mail addresses: yhyeh@nctu.edu.tw, yinhua.yeh@gmail.com (Y.-H. Yeh).

legal systems and ineffective corporate governance mechanisms to increase their own wealth at the expense of minority shareholders (Shleifer and Vishny, 1997; La Porta et al., 1999; Johnson et al., 2000). The tactical use of pyramidal and cross-holding ownership structures exacerbates the problem because it results in a deviation of cash flow rights from voting rights.[1] In these companies, controlling shareholders are able to take control in excess of what they would have without complicated ownership structures. Thus, accounting reports that are overseen by controlling shareholders may be viewed as less credible by other investors, even when a country's accounting standards are viewed as being strong.

Ball et al. (2003) argue that accounting standards are generally viewed as high-quality in their sample of East Asian countries. In fact, Transparency ratings, which are based largely on accounting standards, rate Singapore higher than the U.S. and U.K. However, they find evidence consistent with lower quality of reported earnings in East Asia. In a similar vein, Leuz et al. (2003) classify three of the East Asian countries that Ball et al. study as outsider economies similar to the U.K. and U.S. because of the common law influence in these countries, but they find these countries have by far the worst earnings management ratings. Fan and Wong (2002) also find that concentrated voting rights and greater disparity between cash flow rights and voting rights in East Asia are associated with poor informativeness of earnings.

The potential impact of poor corporate governance structures can be far reaching. For example, research indicates that poor corporate governance is partly to blame for the Asian financial crisis (e.g., Johnson et al., 2000). As a result of the Asian financial crisis, in particular, greater emphasis has been given to strengthening the independence and oversight role of the board of directors of East Asian companies. The establishment of audit committees on the boards, and particularly the independence of the audit committees, has been high on the agenda of policy makers in hopes of reducing information asymmetry between controlling shareholders and other investors. It is therefore of interest to academics, practitioners, and policy makers to understand how audit committees are related to the quality of accounting information from the perspective of investors.

Most of the studies related to the quality of earnings in East Asia are based on sample periods that end in the first half of the 1990s. That is before many East Asian countries adopted current policies on audit committees. Thus, a natural question is whether the negative relation between concentrated control and earnings informativeness persists in East Asia during a later period when most firms have established audit committees. Moreover, does audit committee independence increase earnings informativeness? Or are other characteristics, which are now prescribed in the U.S., but not required in East Asia, more likely to enhance investor confidence in the credibility of earnings, and do these relations depend on a firm's ownership structure? Several studies of U.S. firms indicate that the quality of earnings or integrity of financial reporting is greater when an independent director with financial expertise serves on a firm's audit committee (e.g., Agrawal and Chadha, 2005; Karamanou and Vafeas, 2005; DeFond et al., 2005; Xie et al., 2003; Davidson et al., 2004; Krishnan, 2005) or when the audit committee is fully independent (Anderson et al., 2004). Do we observe similar audit committee characteristics (i.e., voluntary appointment of independent directors with financial expertise or voluntary full independence), and are these characteristics related to earnings informativeness, in East Asia?

This paper explores the relation between the informativeness of accounting earnings, measured as the relation between earnings and cumulative abnormal stock returns, and both ownership structure and audit committee characteristics. We examine 450 companies from Hong Kong, Singapore, and Malaysia. First, consistent with Fan and Wong (2002), we find some evidence that earnings informativeness is lower when controlling shareholders hold more voting rights. However, the convergence between the cash flow rights and voting rights of controlling shareholders is not significantly related to earnings informativeness, which differs from Fan and Wong (2002). Thus, there is some support that Fan and Wong's information effect, or desire to prevent information leakage, persists but their entrenchment effect does not for a sample in which a majority of firms have established audit committees. Second, we find that both complete independence and the proportion of independent directors with "accounting financial" or legal expertise on the audit committee are positively related to earnings informativeness. The results suggest that both limiting CEO influence, i.e., full independence, and expertise are more strongly related to earnings informativeness than

---

[1] (La Porta et al., 1999; Claessens et al., 2000; Faccio and Lang, 2002) find that controlling shareholders of publicly traded firms in most countries typically have significant control in excess of their cash flow investment by using pyramidal and cross-holding ownership structures.

majority independence. Moreover, the positive effect on earnings informativeness that is associated with a higher proportion of independent financial or legal expertise on the audit committee appears to offset any negative effects on earning informativeness that is associated with a high level of voting rights in the hands of controlling shareholders. Finally, the results appear to be driven by the sub-sample of firms with high ownership concentration (i.e., cash flow rights). The results are not significant for the sub-sample of firms with low ownership concentration. This result is consistent with the results in Krishnan and Visvanathan (2009) and DeFond et al. (2005), which indicate the role of the audit committee composition is a complement to a firm's governance structure rather than a substitute. In particular, when the incentive effects of cash flow ownership are high, higher quality audit committees are viewed as being more effective.[2]

This paper contributes to both the literature on corporate governance and the literature on accounting quality. The findings indicate that complete audit committee independence and independent directors who have legal or accounting financial expertise improve the general accounting quality of a firm. In particular, when controlling shareholders have a high level of cash flow rights and the audit committee is fully independent or has a higher proportion of independent directors with accounting financial expertise, earning informativeness is enhanced. This suggests that controlling shareholders whose incentives are more likely to be aligned with minority shareholders because they have high cash flow rights (which investors can observe), can make the financial statements of a firm more credible by establishing an independent audit committee with financial expertise (which investors can observe) in an environment where control rights tend to exceed cash flow rights and preventing information leakage may be desirable (the degree of which is difficult for investors to observe). In other words, it appears that firms with high cash flow ownership can appoint independent directors with certain expertise to signal that the incentive alignment effect associated with their ownership outweighs both the potential entrenchment or information effects associated with concentrated control.

The remainder of the paper is organized as follows. Section 2 develops the motivation and hypotheses tested in the paper. Section 3 describes the sample and country level statistics. Section 4 presents the model and provides variable descriptive statistics. Section 5 reports empirical results, and Section 6 concludes.

2. Motivation and development of hypotheses

2.1. Ownership structure and quality of earnings

Warfield et al. (1995) investigate how the separation of corporate ownership and control affects both the informativeness of earnings and the accounting choices of managers within the U.S. They find that higher managerial ownership is associated both with higher informativeness of earnings and lower discretionary accruals, supporting the incentive alignment effects of cash flow ownership concentration. Wang (2006) extends the study of Warfield et al. (1995) and finds higher earnings quality for U.S. family firms, again supporting the incentive alignment effects of cash flow ownership concentration. However, Agrawal and Chadha (2005) find the probability of earnings restatements in the U.S. is higher when the CEO belongs to the founding family. And Francis et al. (2005) find no association between management ownership and earnings informativeness in a sample of U.S. firms, but instead find that the informativeness of earnings is significantly lower when cash flow rights are separated from voting rights via dual class shares.

The ownership of listed companies in most countries outside the U.S. is typically concentrated in the hands of controlling shareholders, or an ultimate owner, and disparity between cash flow rights and voting rights is not uncommon (La Porta et al., 1999). Fan and Wong (2002) present two potential effects of concentrated ownership in East Asia on earnings informativeness, the entrenchment effect and information effect. The entrenchment effect argues that as the divergence between cash flow and voting rights increases, the controlling shareholder will have a greater incentive to expropriate wealth from minority shareholders and thus predicts a negative relation between earnings informativeness and the divergence between cash flow and voting rights. The information effect argues that high managerial ownership in East

---

[2] Warfield et al. (1995) document a positive relation between managerial ownership and earnings quality in the U.S. supporting the incentive alignment effects of cash ownership. Wang (2006) finds a consistent result for family firms in the U.S. He argues that U.S. family firms have higher earnings quality because of the incentive effects of greater cash flow ownership.

Asia may be a response to a need to operate in greater secrecy. Concentrated control directs the decision rights to a small group of people who possess specific knowledge (Jensen and Meckling, 1992; Christie et al., 1993), which prevents confidential information from leaking out and reduces the transaction cost of knowledge. Preventing the leakage of specific knowledge can be valuable in East Asia where lobbying activities are common and lucrative. Because concentrated control naturally establishes a barrier to information flow to the populace and discourages external competition, concentrated control is associated with opaque financial reporting and low earnings informativeness. In their study of seven East Asian economies, Fan and Wong find support for both the entrenchment and information effects.

We are interested in whether the negative relations that Fan and Wong find persist in a more recent time period in countries that adopted stricter corporate governance policies after the Asian financial crisis. In addition, we extend their analysis to see whether audit committee independence and composition are related to the informativess of earnings in this region.

2.2. Audit committee characteristics and quality of earnings

A firm's audit committee primarily oversees the financial reporting process of a firm. It meets regularly with the outside auditors and internal financial managers of the firm to review the financial statements, audit process, and internal accounting controls of the firm. Thus, audit committees potentially serve an important oversight role and can affect the quality of reported earnings. Supporting this view, McMullen (1996) finds that firms with well-established audit committees are more likely to have reliable financial reporting (i.e., the absence of errors, irregularities, or illegal acts). Two characteristics of audit committees appear to be of particular importance when measuring effectiveness within the U.S.: audit committee independence and financial sophistication.

Several studies suggest that more independent audit committees are more effective. For example, Klein (2002) documents a negative relationship between audit committee independence and abnormal accruals. Carcello and Neal (2003) report that distressed firms that have more independent audit committees are less likely to be issued going-concern reports by their auditors, and more independent audit committees are more effective in shielding auditors from dismissal when a new going-concern report is issued. Chen and Zhou (2007) find that more independent audit committees were quicker to dismiss Arthur Andersen as their firm's auditor after Andersen's credibility was threatened around the Enron scandal. Krishnan (2005) finds that independent audit committees are significantly less likely to be associated with incidences of internal control problems. However, recent reforms in the U.S. have dictated that firms have some committees, including the audit committee, be comprised entirely of outside directors. An argument for complete independence is that it provides independent committee members an opportunity to talk outside of management's hearing, and thus, reduces management's influence over the committee. Consistent with this view, the results in Shivdasani and Yermack (1999) suggest that CEOs do not exert as much control over the director selection process when they do not serve on the nominating committee. Similarly, Anderson et al. (2004) find that fully independent audit committees are associated with a significantly lower cost of debt, suggesting more reliable financial reporting in these firms.

DeFond et al. (2005) state that one of the most controversial provisions of Sarbanes-Oxley requires public companies in the U.S. to disclose whether they have a financial expert on their audit committee. The argument is that financial expertise is necessary to ensure that audit committees fulfill their primary responsibilities of overseeing the financial reporting process and ensuring high-quality financial reporting. Numerous studies provide support for this view. For instance, DeFond et al. (2005) find a positive stock market reaction to the appointment of an accounting financial expert to the audit committee. Similarly, Davidson et al. (2004) find a significantly positive stock price reaction when new members of audit committees have financial expertise. Xie et al. (2003) find the financial sophistication of audit committee members appears to be an important factor in constraining the propensity of managers to engage in earnings management. Agrawal and Chadha (2005) also find that the probability of restatement is lower in companies whose boards or audit committees have an independent director with financial expertise but is not significantly related to independence alone. Karamanou and Vafeas (2005) find that the financial expertise of audit committees is associated with an increased probability of management earnings forecast updates, more informative good news forecasts, and more positive stock market reactions to management forecasts. Krishnan (2005) shows that audit committees with financial expertise are significantly less likely

to be associated with incidences of internal control problems. Moreover, Krishnan and Visvanathan (2009) find that auditors charge lower fees for firms when its audit committee includes financial experts. And Chen and Zhou (2007) find audit committees with greater financial expertise were quicker to dismiss Arthur Andersen as their firm's auditor when Andersen's credibility was threatened around the Enron scandal. More recently, Krishnan et al. (2011) find the presence of directors with legal backgrounds on the audit committee is associated with higher financial reporting quality. Additional tests indicate a positive association between changes in legal expertise and changes in financial reporting quality, suggesting that legal expertise serves as a monitor rather than as a signal of financial reporting quality.

According to the Asian Corporate Governance Association (2000), the Asian Financial Crisis caused a resurgence of interest in corporate governance among government and business circles. In particular, attention was given to improving disclosure. U.S. studies generally support the view that more independent audit committees and audit committees with greater financial sophistication are more effective in monitoring the corporate financial accounting process. However, the mere existence of an audit committee without certain characteristics is not found to make a difference. For example, Beasley (1996) reports that the incidence of financial statement fraud is not related to the existence of an audit committee.

Of particular interest in East Asia, where the disparity between control and cash flow ownership is difficult to observe, is that minority shareholders can observe the existence, independence, and composition of the audit committee from annual reports. Because Fan and Wong find that earnings are less reliable when control is concentrated, we investigate which characteristics of the audit committee might be associated with more reliable earnings, especially when ownership is concentrated. In a sample of Hong Kong listed companies, Chen and Jaggi (2000) find that the ratio of independent non-executive directors to the total number of directors on corporate boards as a whole is positively associated with the comprehensiveness of financial disclosure. Zain et al. (2006) conduct a survey in Malaysia and find that internal auditors feel they are able to contribute more to the external audit when audit committees are more independent and have greater financial expertise. To the extent that more comprehensive financial disclosure is associated with more reliable earnings, we might expect the presence of independent directors with financial or legal expertise on the audit committee, in particular, to be positively associated with the reliability or informativeness of earnings.

Hypothesis 1. Audit committee independence and financial sophistication strengthen earnings informativeness.

When controlling shareholders assign directors to the audit committee, they can potentially increase the credibility of the accounting earnings reports, and hence earnings informativeness, by choosing independent financial and legal experts if the objectivity and professional backgrounds of these members are seen to contribute to high-quality financial statements. Because investors can observe these appointments, any negative entrenchment or information effect that is associated with concentrated control might be mitigated by an improvement in both transparency and overall accounting quality associated with these appointments.

Hypothesis 2. The combined effect of audit committee independence and financial sophistication on earnings informativeness mitigates the negative impact of concentrated control on earnings informativeness.

2.3. Audit committee as a substitute or complement

La Porta et al. (2002) and Claessens et al. (2002) report that higher levels of cash flow rights align the interests of controlling shareholders with those of minority shareholders because controlling shareholders gain more from increasing shareholder wealth than they lose by foregoing expropriation. This interest alignment encourages controlling shareholders to run the business properly, which gives rise to the positive incentive effect. Consistent with this, the results in Yeh et al. (2001) suggest that high levels of family ownership and low levels of family board representation are effective ways of mitigating the separation between cash flow rights and control when family control is central.

To the extent that investors can identify high cash flow rights without excessive voting rights, they will associate high ownership concentration with aligned incentives, and it may not be necessary to incur the extra cost of setting up an independent audit committee. However, if it is difficult for investors to disentangle

cash flow rights from control rights, controlling shareholders with high levels of ownership concentration may be associated with misaligned incentives or viewed as protecting proprietary information. In this case, establishing an audit committee with independent directors with legal or financial expertise may be associated with more reliable reported earnings and a stronger corporate governance system even though investors are unsure of the incentives of the controlling shareholders. Consistent with this view, Yeh and Woidtke (2005) find the proportion of directors represented by a controlling family appears to be a reasonable proxy for the quality of corporate governance at the firm level when investor protection is relatively weak and it is difficult to determine the degree of separation between ownership and control.

Hypothesis 3a. Companies with controlling shareholders who hold a high level of cash flow rights do not need an audit committee to strengthen earnings informativeness. The positive incentive effects associated with cash flow rights held by controlling shareholders are viewed as a substitute for an audit committee.

Hypothesis 3b. Companies with controlling shareholders who hold high levels of cash flow rights can strengthen earnings informativeness through the establishment of an audit committee. The audit committee is viewed as a complement to the positive incentive effects of the cash flow rights held by controlling shareholders.

3. Sample description and country level statistics

3.1. Sample description

The sample in this paper includes the largest 150 listed companies, based on their market values from annual reports for the fiscal year 2000, from three East Asian countries—Hong Kong, Singapore, and Malaysia. The total sample size is 450 companies. Due to the intensity of hand collecting data, we focus on these three East Asian countries because they represent three out of four East Asian countries that are included in Ball et al. (2003), Fan and Wong (2002), and Leuz et al. (2003). We are also able to collect data on audit committee composition for these countries in order to examine whether the composition of the audit committee is associated with improved earnings reliability. Moreover, characteristics common to East Asia, such as concentrated ownership and family control, are common in these countries as well. The results in the aforementioned studies suggest that even though the quantity of earnings information may be increasing and accounting standards have become stricter in these countries, the quality of earnings remains poor during their sample period. We would like to examine whether this relation persists in a more recent time period after stricter corporate governance policies that focus on building stronger boards have been adopted.[3]

Although all three countries adopted some reforms to strengthen the board of directors prior to 1995, they also introduced additional reforms after this time period. For example, majority independent audit committees comprised of at least three members have been compulsory in Singapore since 1989. The Singapore stock exchange sought to strengthen audit committees by adding Chapter 9B to its Listing Manual and making its provisions mandatory in 1996. Chapter 9B covered detailed workings of these committees including their establishment, membership, roles and duties. But in 1998, the exchange decided to remove the compulsory nature of these more detailed rules and transfer them to a Best Practices Guide outside the Listing Manual.

Compulsory audit committees were adopted in Malaysia in 1994. Similar to Singapore, the audit committee must have at least three members with the majority being independent. The regulatory authorities also established the High Level Finance Committee on Corporate Governance in March 1998. The committee subsequently published a "Proposed Malaysian Code on Corporate Governance." Among the conclusions the committee reached was the need to improve the accuracy and timeliness of disclosure. In line with recommendations from the committee, the Securities Commission in Malaysia introduced expanded disclosure requirements during 1998 and 1999.

---

[3] The three countries in our study have either 4 or 5 provisions out of 6 in place to protect shareholder rights, compared to an average score of 4 for common law countries and 5 for the United States (La Porta et al., 1998). In addition, Credit Lyonnais Securities Asia, (2004) rated these three countries near the top of ten Asian emerging markets in 2004 based on the following five dimensions: rules and regulations; enforcement; political/regulatory interference; the international "Generally Accepted Accounting Principles"; and institutional mechanisms and corporate governance culture.

The Stock Exchange of Hong Kong amended its rules in 1992 to require companies to have a minimum of two independent directors and to encourage greater disclosure, accountability, and the establishment of audit committees. Since January 1999, every listed company has been expected to set up an audit committee; however, it is not compulsory. The listing rules simply require that companies explain whether or not they are complying.[4]

In sum, none of the three countries required fully independent audit committees or the inclusion of an audit committee member with accounting financial expertise during our sample period. However, all three countries recommended increased independence and financial expertise or enhanced disclosure of the audit committee's independence, expertise, and operations in the annual report during our sample period.

3.2. Country level descriptive statistics

Table 1 presents descriptive statistics on ownership structure and audit committee independence for each country in the sample. The data on ownership and audit committee composition are obtained from company annual reports. Panel A shows that all three countries are dominated by family control. The ultimate owner of a company is a family for 72% of the entire sample, and ranges from 64% in Malaysia to 77% in Singapore.

Panel B presents data on the establishment of audit committees. Since audit committees are required in both Singapore and Malaysia, it is not surprising to find that 100% of the sample firms in these countries have established an audit committee. In Hong Kong, where audit committees are strongly recommended but not required, approximately 75% of the sample firms have established an audit committee.

Panel C presents the data on audit committee independence. There are 10 firms with established audit committees that provide no data on audit committee independence or composition (two in Singapore and eight in Hong Kong) and 38 firms in Hong Kong with no established audit committee. Consistent with Klein (1998), we use board composition as a proxy for audit committee composition in the absence of an audit committee since the entire board would presumably take on the role of the audit committee in this case.[5] Even though audit committees are not compulsory in Hong Kong and it has the highest proportion of companies with no audit committee, Hong Kong has the highest proportion of companies with audit committees that are composed solely of independent directors (44%). In contrast, in the countries where majority independent audit committees are compulsory, less than a third of the audit committees are fully independent. Twenty-nine percent of the companies in Singapore have fully independent audit committees, and a mere 7% of companies in Malaysia have fully independent audit committees. While approximately 80% of firms in the full sample have audit committees with at least two-thirds independence, further analysis reveals the vast majority of audit committees in these countries cluster around two-thirds independence.

4. Description of the model and variables

4.1. Earnings and returns

Following the literature, we measure earnings informativeness as the correlation between stock returns and reported earnings for the corresponding fiscal year (see, for example, Wang, 2006; Francis et al., 2005; Fan and Wong, 2002; Warfield et al., 1995). Thus, to measure the informativeness of earnings, conditional on ownership structure, audit committee independence, and audit committee composition, we use the following expanded regression model:

$$
\begin{aligned}
CAR_i = {} & a_0 + a_1(Earnings_i) + a_2(Earnings_i * Voting\ Rights_i) + a_3(Earnings_i * Cash\ Flow\ to\ Voting\ Rights_i) \\
& + \beta(Earnings_i * Audit\ Committee\ Characteristics_i) + a_4(Earnings_i * Firm\ Size_i) + a_5(Earnings_i * Leverage_i) \\
& + a_6(Earnings_i * Market-to-Book\ ratio_i) + \gamma(Firm\ Level\ Control\ Variables) \\
& + (Country-and\ Industry-Level\ Fixed\ Effects) + u_i
\end{aligned}
$$

---

[4] For more information, see the Survey of Corporate Governance by the Asian Corporate Governance Association (2000).

[5] Our results are not sensitive to this treatment. We obtain similar results when we assume 0% independence in the absence of an audit committee.

Table 1

Ultimate control type and audit committee independence by country.

The sample consists of the largest 150 listed firms each from Hong Kong, Singapore, and Malaysia. Panel A identifies the largest shareholder in each firm by type. Panel B presents the establishment of audit committees. Panel C presents the frequency of firms according to the proportion of independent directors appointed to the audit committee.

Panel A: Ultimate control owner by type								
Type	Hong Kong		Singapore		Malaysia		ALL	
	N	Fraction (%)	N	Fraction (%)	N	Fraction (%)	N	Fraction (%)
Family	113	75.33	115	76.67	96	64.00	324	72.00
Government	24	16.00	29	19.33	21	14.00	74	16.44
Other	13	8.67	6	4.00	33	22.00	52	11.56
Total	150	100.00	150	100.00	150	100.00	450	100.00

Panel B: Establishment of audit committee								
Audit committee	Hong Kong		Singapore		Malaysia		ALL	
	N	Fraction (%)	N	Fraction (%)	N	Fraction (%)	N	Fraction (%)
Yes[a]	112	74.67	150	100.00	150	100.00	412	91.56
No[b]	38	25.33	0	0.00	0	0.00	38	8.44
Total	150	100.00	150	100.00	150	100.00	450	100.00

Panel C: Proportion of independent directors on the audit committee								
Proportion of independence	Hong Kong		Singapore		Malaysia		ALL	
	N	Fraction (%)	N	Fraction (%)	N	Fraction (%)	N	Fraction (%)
0.00%	18	12.00	0	0.00	0	0.00	18	4.00
0.01% to 33.32%	24	16.00	4	2.67	2	1.33	30	6.67
33.33% to 66.65%	10	6.67	6	4.00	28	18.67	44	9.78
66.66% to 99.99%	32	21.33	97	64.67	109	72.67	238	52.89
100.00%	66	44.00	43	28.67	11	7.33	120	26.67
Total	150	100.00	150	100.00	150	100.00	450	100.00

[a] Eight Hong Kong and two Singapore companies indicate that they have set up an audit committee, but no further details of composition or independence are given. We therefore use board independence as a proxy for independence.

[b] Firms with no audit committee are classified as having the same percentage independence as the board.

Following Fan and Wong (2002), *CAR* is calculated as a firm's annual return less the market annual return over the same period corresponding to the release of earnings information for a firm's 2000 fiscal year. The annual returns are thus calculated by compounding monthly returns beginning twelve months prior to the latest date by which a firm is required to disclose its 2000 annual report by law or listing rules. This generally incorporates the nine months prior to and the 3 months following a firm's fiscal year-end. *Earnings* is the net earnings that are reported for fiscal year 2000 divided by the market value of equity at the beginning of 2000.

Table 2 presents summary statistics for the full sample for returns, earnings, ownership structure, audit committee characteristics, and control variables. The stock return and accounting data are obtained from Datastream and Compustat. Panel A reports an average (median) CAR, or abnormal annual return, for the sample of 4.06% (−0.30%). We also compute CAR using two-year returns for 2000 and 2001 throughout our analysis and obtain similar results. Average (median) earnings are 5.67% (6.33%).

4.2. Ownership structure

We examine two aspects of ownership structure: the level of voting rights and the divergence between cash flow and voting rights. *Voting Rights* is defined as the controlling voting rights of the shareholders of the firm, and *Cash Flow to Voting Rights* is the ratio of cash flow to voting rights of the controlling shareholder. Following La Porta et al. (1999) and Claessens et al. (2000), we consider both direct and indirect control when calculating the voting rights of the ultimate owner, or controlling shareholder, of a firm. Direct control

Table 2

Full sample descriptive statistics.

The sample consists of 450 firms from Hong Kong, Singapore, and Malaysia. Panel A presents abnormal stock returns (CARs) and earnings. CAR is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. Earnings equals reported net earnings for fiscal year 2000 divided by the market value of equity at the beginning of 2000. Panel B presents the statistics on ownership structure. Voting Rights is the sum of the direct and indirect voting rights (a detailed description is provided in Appendix A). Cash Flow-to-Voting Rights is the ratio of the cash flow rights or ownership to the voting rights of the ultimate owner. Panel C presents descriptive statistics on audit committee independence. Panel D presents the statistics on the audit committee composition. Non-accounting financial experts are defined as independent directors who are currently or were previously employed as executives in other publicly held corporations. Accounting financial experts are defined as independent directors with either experience as a Chief Financial Officer or a Certified Public Accountant. Legal experts are defined as independent directors who also practice law. Accounting financial expert (Legal expert) represented is equal to one when at least one accounting financial (legal) expert sits on the audit committee. Majority AF-L Expert equals one when more than 50% of the audit committee is represented by either accounting financial or legal experts. Panel E presents summary statistics for control variables, all measured as of the beginning of 2000. Firm size is measured as the natural log of the book value of the total assets of a firm. Leverage is defined as the ratio of the book value of debt to total assets. The market-to-book ratio is defined as the market value of equity over the book value of total assets.

Variables	Average	Std Dev	Q1	Median	Q3
A. Abnormal stock returns and earnings					
CAR (%)	4.06	38.44	−20.43	−0.30	22.15
Earnings (%)	5.67	31.29	2.04	6.33	10.89
B. Ownership structure					
Voting rights (%)	46.48	17.10	32.8	46.56	59.56
Cash flow rights (%)	32.56	18.48	19.15	30.48	43.52
Cash flow to voting rights	0.70	0.28	0.50	0.65	1.00
C. Audit committee independence					
Number of independent directors	2.10	0.97	2.00	2.00	3.00
Proportion of independent directors	0.69	0.26	0.67	0.67	1.00
100% independence	0.27	0.44	0.00	0.00	1.00
D. Audit committee composition					
Proportion of non-accounting financial experts	0.34	0.27	0.17	0.34	0.50
Proportion of accounting financial experts	0.35	0.32	0.00	0.33	0.67
Proportion of legal experts	0.09	0.19	0.00	0.00	0.00
Accounting financial expert represented	0.64	0.48	0.00	1.00	1.00
Legal director represented	0.22	0.42	0.00	0.00	0.00
Majority AF-L expert	0.40	0.49	0.00	0.00	1.00
E. Control variables					
Total assets (million U.S. dollars)	2448.3	7496.1	682.5	465.1	1273.0
Leverage	50.9	33.0	28.5	46.7	70.7
Market-to-Book ratio	1.3	3.5	0.3	0.6	1.1

includes the voting rights through shares that are registered in the name of the controlling shareholder. Indirect control includes voting rights through shares that are held by entities that the controlling shareholder controls. For each company, we carefully trace the chains of control through the relationships for a specific group, if there is one, all the way back to the ultimate owner. The ultimate owner(s) could be a family or an individual, the state, a widely held financial institution, a widely held corporation, or other as defined in La Porta et al. (1999). After identifying this information, all information is converted into a clear group map that details the ultimate owner and interlocking stakes between firm groups. Direct voting rights are then calculated as the sum of the fraction of shares that are registered to the ultimate owner, and the indirect voting rights are calculated as the "weakest link" in the chain of shares (lowest percentage of all) held by the firms that the ultimate owner controls. A detailed example is provided in Appendix A.

Panel B of Table 2 shows that, consistent with the findings of other studies, ownership is concentrated and there is a divergence between cash flow ownership and control. The average (median) voting rights of controlling shareholders in our sample is 46.5% (46.6%), but the average (median) cash flow rights is lower, at 32.6% (30.5%). Thus, cash flow rights only account for 70% of voting rights on average.

4.3. Audit committee characteristics

Audit Committee Characteristics include two primary measures of interest: independence and composition. We define two measures of *Audit Committee Independence* to examine the effects of independence on earnings informativeness. *%Audit Committee Independence* is the ratio of independent directors to the total number of directors that are appointed to the audit committee; and *100% Audit Committee Independence* is an indicator variable that equals one when the audit committee of a company consists entirely of independent directors, and equals zero, otherwise. We use both measures to examine whether greater independence or full independence is related to earnings informativeness. Consistent with the results in Table 1, Panel C of Table 2 shows that only 27% of firms in the full sample have fully independent audit committees. Instead, the median firm meets the majority independence requirement by appointing two independent directors out of a total of three audit committee members.

Following existing studies (e.g., Xie et al., 2003; Davidson et al., 2004; Agrawal and Chadha, 2005; DeFond et al., 2005), we further classify independent directors according to their financial expertise. We look at both the proportion of audit committee seats that is held by each type of independent expert and whether a particular type of independent expert is represented on an audit committee. Non-accounting financial experts are defined as independent directors who are currently or were previously employed as executives in other publicly held corporations. *%Non-accounting Financial Experts* is defined as the ratio of independent non-accounting financial experts to the total number of directors on the audit committee. Accounting financial experts are defined as independent directors with experience as either a Chief Financial Officer or Certified Public Accountants.[6] *%Accounting Financial Experts* is defined as the ratio of independent accounting financial experts to the total number of directors on the audit committee. Following Xie et al. (2003) and Krishnan et al. (2011), we additionally include legal expertise. Legal experts are defined as independent directors who also practice law. *%Legal Experts* is defined as the ratio of independent legal directors to the total number of directors on the audit committee. Finally, *Majority AF-L Expert* is an indicator variable that equals one when more than 50% of the directors on the audit committee of a firm are either accounting financial or legal independent experts as defined above.

Panel D of Table 2 contains summary statistics on audit committee composition. Non-accounting and accounting financial experts are the most common types of independent experts who are appointed to audit committees. On average, 34% of independent directors on audit committees are non-accounting financial experts and 35% are accounting financial experts. In contrast, only 9% of independent directors who are appointed to audit committees are legal experts during our sample period. Moreover, 64% of audit committees appoint at least one accounting financial expert, but only 22% of audit committees appoint at least one legal expert. Finally, we find that 40% of sample firms appoint a majority of independent directors with either accounting financial or legal expertise to their audit committees.

4.4. Control variables

We additionally include a set of control variables that is similar to that used in Fan and Wong to control for observed variations in the earnings–return relation that result from causes other than ownership structure and audit committee independence or composition. All values are taken as of the beginning of 2000, i.e., at fiscal year-end 1999 for accounting data. *Firm Size* is measured as the natural log of the book value of total assets. *Leverage* is defined as the ratio of the book value of debt to total assets. The *Market-to-Book ratio* is defined as the market value of equity over the book value of assets. Panel E of Table 2 reports summary statistics for these variables. Average (median) book value of total assets in the sample is 2,448.3 (465.1) million U.S. dollars. Average leverage is 50.9%. Finally, the average market-to-book ratio in the sample is 1.31.

---

[6] Generally speaking, companies that list regulations or best practices require at least one independent director with financial or accounting expertise, but the definition of expertise is fairly loose. For example, work experience in the financial or accounting department of a corporation could qualify directors as having financial or accounting expertise. However, this information is typically not disclosed for directors who are listed as employees of other companies in annual reports. We therefore do not classify these directors as accounting financial experts but instead classify them as non-accounting financial experts. To the extent that these directors are as qualified to certify the informativeness of earnings as are accounting financial experts (classified as such based on our stricter definition), we should find similar results for both non-accounting and accounting financial experts.

Table 3

Simple regressions of stock returns on earnings.

This table presents a regression analysis of earnings informativeness as measured by the earnings–return relation. The dependent variable, CAR, is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. Earnings equals reported net earnings for fiscal year 2000 divided by the market value of equity at the beginning of 2000. All regressions include industry fixed effects and country fixed effects when appropriate (not reported). T-values are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Dependent variable: CAR			
	Full sample	Hong Kong	Singapore	Malaysia
Industry fixed effects	Yes	Yes	Yes	Yes
Country fixed effects	Yes	No	No	No
Intercept	2.81 (1.55)	16.32 (3.98)***	−3.01 (−1.15)	−5.02 (−2.76)***
Earnings	0.23 (4.07)***	0.41 (3.45)***	0.06 (0.94)	0.39 (3.82)***
N	450	150	150	150
R^2	0.04	0.07	0.01	0.09

5. Empirical results

We include indicator variables to control for industry-level fixed effects in all of our regressions and country-level fixed effects when appropriate. Industries are classified according to the methodology in Claessens et al. (2000). The country and fixed effects are not reported in the tables for the sake of brevity. The first set of empirical results examines the basic relations between stock returns and earnings in our sample. The results are reported in Table 3. Column 1 presents results for the full sample, and Columns 2 through 4 present results for each country individually. Similar to Fan and Wong (2002), the coefficient for earnings for the full sample has a positive and significant coefficient suggesting that earnings have an information role in East Asia. The coefficient is also positive for each country, though it is not significant for Singapore.

5.1. Earnings informativeness and audit committee independence

We next test the informativeness of earnings conditional on ownership structure and audit committee independence. The empirical results are presented in Table 4. Columns 1 through 3 present results for the full sample. For comparison to previous studies, Column 1 follows the specification used in existing studies by examining only the impact of variables on the earnings–return relation, i.e., includes only variables interacted with earnings. However, the remainder of the analyses in this paper includes non-earnings variables separately to control for any impact they may have on returns separate from reported earnings.[7] Given the non-compulsory establishment of audit committees but higher voluntary compliance for fully independent audit committees, we further analyze Hong Kong separately from Malaysia and Singapore. Columns 4 and 5 present results for these separate country sub-samples.

Consistent with Fan and Wong (2002), we find a negative coefficient for earnings conditional on voting rights for the full sample. In unreported tests, the relation for earnings conditional on voting rights remains significant when we simply add earnings conditional on the two measures of audit committee independence to the specification in Column 1. However, we find its significance level is affected by the specification. Its significance level drops below conventional levels when both non-earnings variables and earnings conditional on *100% Audit Committee Independence* are included in the specification in Column 3. Thus, we find the negative relation between earnings informativeness and voting rights found in previous studies persists during our sample period when we follow similar specifications. However, the relation weakens somewhat when we add control variables not included in these studies. We additionally find a positive coefficient for earnings conditional on cash flow to voting rights, but unlike previous studies, it is not significant in any of the specifications.

---

[7] We also perform our entire analysis using only interaction terms similar to the specification in Column 1. Our audit committee results are robust to the different specifications.

Table 4

Audit committee independence and earnings informativeness.

This table presents a regression analysis of the relation between audit committee independence and earnings informativeness as measured by the earnings–return relation. The dependent variable, CAR, is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. Earnings equals reported net earnings for fiscal year 2000 divided by the market value of equity at the beginning of 2000. Voting Rights is the sum of the direct and indirect voting rights (a detailed description is provided in Appendix A). Cash Flow-to-Voting Rights is the ratio of the cash flow rights or ownership to the voting rights of the ultimate owner. %Audit Committee Independence is the number of independent directors over the total number of directors on the audit committee when an audit committee exists, and is the number of independent directors over the total number of directors when an audit committee does not exist. The 100% Audit Committee Independence variable equals one when the audit committee of a company consists entirely of independent directors. Size is the natural logarithm of the book value of assets in millions of U.S. dollars at the beginning of 2000. Market-to-Book is the market value of equity divided by the book value of total assets at the beginning of 2000. Leverage is the total liabilities divided by the total assets at the beginning of 2000. All regressions include industry fixed effects and country fixed effects when appropriate (not reported). T-values are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Dependent variable: CAR				
	Full sample			Hong Kong	Malaysia and Singapore
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	No	Yes
Intercept	−17.59 (−3.39)***	−39.19 (−2.09)**	−33.51 (−1.84)*	−17.92 (−0.42)	−23.79 (−1.26)
Earnings	1.38 (2.65)***	0.11 (0.13)	1.00 (1.74)*	0.92 (0.58)	−0.99 (−0.63)
Earnings*Voting Rights	−0.86 (−2.54)***	−0.64 (−1.71)*	−0.51 (−1.22)	−0.93 (−0.85)	−0.05 (−0.09)
Earnings*Cash Flow-to-Voting Rights	0.28 (0.96)	0.48 (1.43)	0.26 (0.85)	1.10 (1.43)	0.08 (0.23)
Earnings*%Audit Committee Independence		0.56 (1.76)*			
Earnings*100% Audit Committee Independence			0.28 (1.97)**	0.62 (2.25)**	0.45 (1.43)
Earnings*Size	−0.06 (−1.49)	−0.02 (−0.34)	−0.05 (−1.39)	−0.08 (−0.84)	0.08 (0.78)
Earnings*Leverage	−0.00 (−0.01)	0.04 (0.11)	0.12 (0.36)	−0.07 (−0.11)	0.03 (0.06)
Earnings*Market-to-Book	0.30 (2.00)**	0.29 (1.96)*	0.29 (1.93)*	0.34 (1.14)	0.54 (2.40)**
Voting rights		0.05 (0.45)	0.05 (0.49)	0.24 (0.98)	−0.01 (−0.10)
Cash Flow-to-Voting Rights		1.36 (0.22)	1.83 (0.29)	−1.53 (−0.09)	1.33 (0.23)
%Audit Committee Independence		8.79 (1.28)			
100% Audit Committee Independence Dummy			7.26 (1.55)	7.94 (0.91)	10.4 (1.27)
Size		0.94 (0.75)	0.94 (0.76)	0.25 (0.09)	1.74 (1.37)
Leverage		3.35 (0.6)	2.47 (0.44)	13.74 (1.16)	−8.85 (−1.51)
Market-to-Book		−0.99 (−2.02)**	−0.95 (−1.94)*	−0.78 (−1.13)	−0.62 (−0.29)
R^2	0.22	0.23	0.23	0.29	0.15
N	450	450	450	150	300

The positive coefficient for Earnings * Audit Committee Independence suggests that earnings are more informative with more independent audit committees. In unreported tests, we substitute an indicator variable which equals 1 when at least 67%, the median value, of audit committee members are independent. The coefficient for this interaction is not significant suggesting that 100% independence is driving the positive relation, not having at least a two-thirds majority. Consistent with this interpretation, %Audit Committee Independence is significant for the Hong Kong sub-sample, where over 40% of the firms have fully independent audit committees, but is not significant in Malaysia and Singapore where most firms have 2 out of 3 independent directors. This result indicates that the earnings–return relationship is stronger (i.e., earnings are more informative) when audit committees are fully independent, or monitoring is stronger when independent directors on the audit committee have an opportunity to talk outside of management's hearing.

5.2. Earnings informativeness and audit committee composition

In Table 5, we examine whether independence alone is effective or whether independent directors with expertise are associated with more reliable accounting information. Consistent with U.S. studies on financial expertise, the earnings–return relation does not improve with the proportion of independent non-accounting financial experts, but it does improve with the proportion of independent accounting financial experts. The earnings–return relation is also positively related to the proportion of independent legal experts. Unlike the results for independence alone, the positive relationship is significant when a majority of audit committee members are independent and have either accounting financial or legal expertise. Moreover, the significance holds for both the Hong Kong and Malaysia/Singapore sub-samples (not reported). Thus, investors appear to associate the voluntary appointment of independent directors with greater accounting financial or legal expertise with more reliable reported earnings. Taken together, these results indicate, consistent with studies on board composition, that the composition of the audit committee is more important than its independence alone even though independence receives the most attention from policy makers. An alternate explanation is that investors view voluntary audit committee decisions, full independence and requirement of expertise, as more credible signals of the informativeness of earnings than compulsory majority independence.

5.3. Earnings informativeness, voting rights, and audit committee characteristics

In Table 6, we examine whether the increase in earnings informativeness associated with full independence and a greater proportion of independent financial and/or legal experts is enough to offset the detrimental effect associated with concentrated control. We interact our measures of 100% audit committee independence and audit committee composition with voting rights and earnings to examine the relation between audit committee composition, conditional on level of voting rights. Similar to the findings in Table 5, we find significant positive coefficients for the interactions of voting rights and earnings with both audit committees with 100% independence and with audit committees that include more independent financial or legal experts. In all cases, the coefficient for the audit committee interactions is larger than the coefficient for earnings conditional on voting rights alone. For example, the coefficient for the interaction of voting rights and earnings is −.52 (−.77) in specification 1 (3), but the coefficient when the 100% Audit Committee Independence (% Accounting financial experts) is added is 0.79 (1.14). In unreported tests, we find no significant relation when audit committee independence is used in place of 100% independence. These results suggest that establishing a fully independent audit committee and appointing a majority of independent directors with financial or legal expertise are associated with more reliable reported earnings, and this certification more than offsets the detrimental effect on earnings informativeness that is associated with concentrated control.[8] Our results also suggest that majority independence alone is not sufficient to limit CEO influence and increase the perceived reliability of reported

---

[8] We examine what proportion of firms that have 100% Audit Committee independence are also classified as Majority AF-L Expert firms to see whether full independence is simply a proxy for a majority of independent directors with accounting financial or legal expertise. Only 29% of firms with fully independent audit committees are classified as Majority AF-L Expert firms, while 45% of firms with less than 100% audit committee independence are classified as Majority AF-L Expert firms. Moreover, both interactions remain significant when included in the same regression. Thus, full independence and majority expertise both appear to be important.

Table 5

Audit committee composition and earnings informativeness.

This table presents a regression analysis of the relation between audit committee composition and earnings informativeness as measured by the earnings–return relation.The dependent variable, CAR, is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. Earnings equals reported net earnings for fiscal year 2000 divided by the market value of equity at the beginning of 2000. Voting Rights is the sum of the direct and indirect voting rights (a detailed description is provided in Appendix A). Cash Flow-to-Voting Rights is the ratio of the cash flow rights or ownership to the voting rights of the ultimate owner. %Non-accounting financial experts is the number of independent directors who are currently or were previously employed as executives in other publicly held corporations over the total number of directors on the audit committee. %Accounting financial experts is the number of independent directors with either experience as a Chief Financial Officer or a Certified Public Accountant over the total number of directors on the audit committee. %Legal experts is the number of independent directors who also practice law over the total number of directors on the audit committee. Majority AF-L expert equals one when more than 50% of the audit committee is represented by either accounting financial or legal experts. Size is the natural logarithm of the book value of assets in millions of U.S. dollars at the beginning of 2000. Market-to-Book is the market value of equity divided by the book value of total assets at the beginning of 2000. Leverage is the total liabilities divided by total assets at the beginning of 2000. All regressions include country and industry fixed effects (not reported). T-values are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Dependent variable: CAR			
Country and industry fixed effects	Yes	Yes	Yes	Yes
Intercept	−37.53	−41.32	−35.17	−37.52
	(−2.06)**	(−2.25)**	(−1.92)*	(−2.04)**
Earnings	1.39	1.26	1.06	0.97
	(2.61)***	(2.38)**	(1.87)*	(1.75)*
Earnings*Voting Rights	−0.89	−0.60	−0.58	−0.4
	(−2.37)**	(−1.54)	(−1.5)	(−1.02)
Earnings*Cash Flow-to-Voting Rights	0.25	0.15	0.27	0.39
	(0.83)	(0.49)	(0.91)	(1.27)
Earnings*%Non-accounting financial experts	0.02			
	(0.07)			
Earnings*%Accounting financial experts		0.46		
		(1.73)*		
Earnings*%Legal experts			0.86	
			(1.69)*	
Earnings*Majority AF-L expert				0.49
				(2.38)**
Earnings*Size	−0.06	−0.06	−0.06	−0.07
	(−1.38)	(−1.56)	(−1.45)	(−1.68)*
Earnings*Leverage	−0.01	−0.02	0.18	0.17
	(−0.03)	(−0.06)	(0.52)	(0.51)
Earnings*Market-to-Book	0.30	0.30	0.29	0.29
	(1.98)**	(2.0)**	(1.9)*	(1.94)*
Voting rights	0.07	0.05	0.05	0.03
	(0.65)	(0.50)	(0.46)	(0.33)
Cash Flow-to-Voting Rights	4.10	3.75	3.22	1.67
	(0.65)	(0.6)	(0.51)	(0.27)
%Non-accounting financial experts	−6.89			
	(−1.05)			
%Accounting financial experts		4.08		
		(0.7)		
%Legal experts			−2.18	
			(−0.23)	
Majority AF-L expert				2.08
				(0.56)
Size	1.30	1.36	1.14	1.29
	(1.04)	(1.09)	(0.91)	(1.04)
Leverage	2.77	3.42	1.32	2.28
	(0.50)	(0.61)	(0.23)	(0.41)
Market-to-Book	−0.95	−0.97	−0.98	−0.94
	(−1.92)*	(−1.97)**	(−1.99)**	(−1.91)*
R^2	0.22	0.23	0.22	0.23
N	450	450	450	450

Table 6

Audit committee characteristics, voting rights, and earnings informativeness.

This table presents a regression analysis of the relation between audit committee composition and voting rights on earnings informativeness as measured by the earnings–return relation. The dependent variable, CAR, is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. Earnings equals reported net earnings for fiscal year 2000 divided by the market value of equity at the beginning of 2000. Voting Rights is the sum of the direct and indirect voting rights (a detailed description is provided in Appendix A). 100% Audit Committee independence equals one when all audit committee members are independent directors and zero, otherwise. %Non-accounting financial experts is the number of independent directors who are currently or were previously employed as executives in other publicly held corporations over the total number of directors on the audit committee. %Accounting financial experts is the number of independent directors with either experience as a Chief Financial Officer or a Certified Public Accountant over the total number of directors on the audit committee. %Legal experts is the number of independent directors who also practice law over the total number of directors on the audit committee. Majority AF-L expert equals one when more than 50% of the audit committee is represented by either accounting financial or legal experts. Size is the natural logarithm of the book value of assets in millions of U.S. dollars at the beginning of 2000. Market-to-Book is the market value of equity divided by the book value of total assets at the beginning of 2000. Leverage is the total liabilities divided by total assets at the beginning of 2000. All regressions include country and industry fixed effects (not reported). T-values are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Independent variable	Dependent variable: CAR				
Country and industry fixed effects	Yes	Yes	Yes	Yes	Yes
Intercept	−31.51	−32.57	−38.29	−31.79	−34.95
	(−1.85)*	(−1.89)*	(−2.21)**	(−1.84)*	(−2.01)**
Earnings	0.87	1.15	1.46	1.01	0.91
	(1.66)*	(1.92)*	(2.86)***	(1.93)*	(1.76)*
Earnings*Voting Rights	−0.52	−0.77	−0.77	−0.68	−0.55
	(−1.36)	(−1.49)	(−2.23)**	(−1.89)*	(−1.53)
Earnings*Voting Rights* 100% AC independence	0.79				
	(2.24)**				
Earnings*Voting Rights* %Non-accounting financial experts		−0.16			
		(−0.30)			
Earnings*Voting Rights *%Accounting financial experts			1.14		
			(2.16)**		
Earnings*Voting Rights *%Legal experts				1.91	
				(1.81)*	
Earnings*Voting Rights *Majority AF-L expert					1.22
					(2.76)***
Earnings*Size	−0.03	−0.03	−0.06	−0.03	−0.03
	(−1.08)	(−0.76)	(−1.8)*	(−1.08)	(−1.05)
Earnings*Leverage	0.07	−0.09	−0.09	0.08	0.004
	(0.21)	(−0.27)	(−0.28)	(0.23)	(0.01)
Earnings*Market-to-Book	0.33	0.35	0.30	0.32	0.34
	(2.30)**	(2.42)**	(2.12)**	(2.21)**	(2.43)**
Voting Rights	0.04	0.07	0.05	0.05	0.02
	(0.41)	(0.63)	(0.48)	(0.48)	(0.2)
100% Audit Committee Independence	7.08				
	(1.53)				
%Non-accounting financial experts		−6.14			
		(−0.94)			
%Accounting financial experts			3.33		
			(0.58)		
%Legal experts				−3.21	
				(−0.33)	
Majority AF-L expert					1.49
					(0.4)
Size	0.87	1.12	1.32	0.99	1.19
	(0.71)	(0.9)	(1.07)	(0.81)	(0.97)
Leverage	2.89	3.36	4.1	1.98	3.32
	(0.52)	(0.06)	(0.74)	(0.35)	(0.6)
Market-to-Book	−0.95	−0.94	−0.95	−0.97	−0.93
	(−1.94)*	(−1.91)*	(−1.93)*	(−1.97)**	(−1.90)*
R^2	0.23	0.22	0.23	0.22	0.23
N	450	450	450	450	450

earnings when control is concentrated. Moreover, independent directors who are executives at other companies are not associated with a stronger earnings–return relationship. The increase is found only for independent directors either with accounting financial or legal expertise, as they may possess greater financial sophistication and/or objectivity.

5.4. Audit committee as substitute or complement

Our earlier results indicate that earnings informativeness is weakened when the ultimate owner of a firm has a higher level of control, but the divergence between control and cash flow rights is not significant. This may be because it is either difficult for investors to measure the divergence between cash flow and voting rights or because the protection of proprietary information persists during our sample period but the entrenchment effect from the divergence of cash flow to voting rights is mitigated by a stronger corporate governance environment during our sample period. Regardless, it is noteworthy that the earning-return relation may be weaker when proprietary information is protected, even when this private information is associated with higher returns. For example, the incentives of an ultimate owner with high cash flow rights may be aligned with other shareholders, and they may still choose to protect certain information if it is associated with the company receiving kickbacks (as long as the kickbacks are kept confidential). Thus, abnormal returns may be high for firms with high cash flow rights regardless of audit committee composition or earnings informativeness.

On the other hand, even though investors can observe high cash flow ownership, it may be difficult for other investors to differentiate between when controlling shareholders have an incentive to protect proprietary information and when the entrenchment effects of excess control outweigh the positive incentive effects of cash flow ownership. In this case, certain audit committee characteristics may certify the positive incentive effects of high cash flow ownership, and we might expect to find both stronger stock performance and a stronger earnings–return relation for firms with high cash flow ownership and certain audit committee characteristics.

5.4.1. Audit committee characteristics and market-adjusted returns

We begin by examining the *CAR*s according to different levels of cash flow rights and audit committee characteristics. First, we divide the sample into High and Low cash flow rights sub-samples based on the median cash flow rights for the full sample. In Panel A of Table 7, we further divide the High and Low cash flow rights sub-samples according to whether the audit committee is 100% independent or not. The results in Panel A suggest that firms with high cash flow rights and 100% audit committee independence have the

Table 7

Market-adjusted returns according to level of cash flow rights and audit committee characteristics.

CAR is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. The High and Low cash flow rights sub-samples are created by dividing the sample according to the median cash flow rights for the full sample. In Panel A, we further divide the High and Low cash flow rights sub-samples according to whether the audit committee is 100% independent or not. In Panel B, we further divide the High and Low cash flow rights sub-samples according to whether more than 50% of the audit committee is represented by either accounting financial or legal experts or not.

Sub-sample	CAR Average	CAR Std. Deviation	Tukey's Studentized Range Test between each sub-sample and the first sub-sample
Panel A: Cash flow rights and audit committee independence			
High cash flow rights AND 100% Audit Committee independence	13.96	58.95	–
High cash flow rights BUT NOT 100% Audit Committee independence	3.04	33.69	Insignificant
Low cash flow rights AND 100% Audit Committee independence	1.90	40.26	Insignificant
Low cash flow rights BUT NOT 100% Audit Committee independence	1.44	29.73	Significant at the 10% level
Panel B: Cash flow and audit committee profession			
High cash flow rights AND Majority AF-L expert	21.26	60.38	–
High cash flow rights BUT NOT Majority AF-L expert	1.37	34.70	Significant at the 10% level
Low cash flow rights AND Majority AF-L expert	−5.46	27.02	Significant at the 10% level
Low cash flow rights BUT NOT Majority AF-L expert	4.58	33.92	Significant at the 10% level

highest average 12-month market-adjusted returns, but the difference is only marginally significant when compared to the returns of firms with low cash flow rights and lower audit committee independence.

Panel B divides the High and Low cash flow rights sub-samples according to whether the majority of the audit committee directors are independent directors with accounting financial or legal expertise. In contrast to the results in Panel A, Panel B shows that firms with high cash flow rights and audit committees in which the majority of directors are financially or legally sophisticated independent directors have the highest average 12-month market-adjusted returns, and the returns are significantly greater than those of all of the other sub-samples. Thus, firms with high cash flow rights are associated with higher returns when the audit committee consists of a majority of independent directors with financial or legal expertise. Do these firms also have a stronger earnings–return relationship?

5.4.2. Audit committee composition, level of cash flow rights, and earnings informativeness

The results in Table 7 indicate that audit committee composition is significantly related to high abnormal returns when cash flow rights are higher. In this section, we examine whether audit committee composition is also significantly related to increased earnings informativeness. We re-run the regression analysis of audit committee composition and earnings informativeness separately for the High and Low cash flow rights sub-samples. The results for the High cash flow rights sub-sample are presented in Table 8. Similar to the results for the full sample, we find significant, positive coefficients for earnings conditional on both fully independent audit committees and the proportion of independent directors with either accounting financial or legal expertise. No significant relation is found for independent non-accounting financial directors. In contrast, the results in Table 9 indicate that audit committee characteristics are not significantly related to earnings informativeness for firms that are characterized by low cash flow rights.

Taken together, the results in Tables 8 and 9 support the hypothesis that audit committee characteristics are a complement to high cash flow ownership. Audit committee characteristics do not appear to provide a substitute mechanism for verifying the accuracy of reported earnings when incentives may be misaligned, that is, when cash flow rights are low. Instead, audit committee characteristics appear to provide a complementary mechanism for verifying the accuracy of reported earnings when earnings are viewed as being more opaque due to concentrated ownership and control. This suggests that controlling shareholders with high levels of cash flow rights can signal their commitment to a better corporate governance system by voluntarily establishing fully independent audit committees and audit committees with a majority of independent directors with accounting financial or legal expertise. This commitment, which is currently voluntary in these countries, appears to be related to both stronger earnings informativeness and stronger stock performance.

5.5. Robustness tests

In this section, we include other board and corporate governance characteristics that may be related to earnings informativeness to examine whether the relation between audit committee independence and composition is robust. For example, Xie et al. (2003) include additional audit committee characteristics (size and meeting frequency) and board characteristics (size, independence and whether the CEO serves as Chairman) in their study of earnings management and find that audit committee meeting frequency and board size are negatively related to discretionary current accruals. Becker et al. (1998) and Francis et al. (1999) find that earnings quality is positively related to audit quality, or being audited by a Big 6 Auditor, during their sample period. We therefore collect these variables for our sample. In untabulated results, we find that boards in our sample tend to meet the minimal board independence requirements during this period, and thus, primarily appoint independent directors to serve on the audit committee.[9] Only 36% of all directors are independent, on average. We also find little variation in audit quality. Over 90% of reporting firms hire a Big 5 Auditor.[10] Finally, only 272 (229) firms report the number of times the audit committee

---

[9] Firms primarily appoint independent directors with expertise to serve on the audit committee in our sample. Thus, we do not include a separate board measure for independent director expertise.
[10] Auditor is unavailable for 15 firms.

Table 8

Audit committee characteristics and earnings informativeness for high cash flow rights firms.

This table presents a regression analysis of the relation between audit committee composition and earnings informativeness as measured by the earnings–return relation when cash flow rights are high compared to the median value. The dependent variable, CAR, is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. Earnings equals reported net earnings for fiscal year 2000 divided by the market value of equity at the beginning of 2000. Voting Rights is the sum of the direct and indirect voting rights (a detailed description is provided in Appendix A). %Audit Committee Independence is the number of independent directors over the total number of directors on the audit committee or number of independent directors over total number of directors in the absence of an audit committee. 100% Audit Committee Independence equals one when the audit committee of a company consists entirely of independent directors and zero, otherwise. %Non-accounting financial experts is the number of independent directors who are currently or were previously employed as executives in other publicly held corporations over the total number of directors on the audit committee. %Accounting financial experts is the number of independent directors with either experience as a Chief Financial Officer or a Certified Public Accountant over the total number of directors on the audit committee. %Legal experts is the number of independent directors who also practice law over the total number of directors on the audit committee. Majority AF-L expert equals one when more than 50% of the audit committee is represented by either accounting financial or legal experts. Size is the natural logarithm of the book value of assets in millions of U.S. dollars at the beginning of 2000. Market-to-Book is the market value of equity divided by the book value of total assets at the beginning of 2000. Leverage is total liabilities divided by total assets at the beginning of 2000. All regressions include country and industry fixed effects (not reported). T-values are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Dependent variable: CAR					
Country and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	−4.04	8.67	3.19	−16.96	3.28	−10.78
	(−0.13)	(0.31)	(0.11)	(−0.570)	(0.11)	(−0.37)
Earnings	−1.44	0.23	0.66	1.02	0.43	0.51
	(−1.27)	(0.43)	(1.21)	(1.81)*	(0.78)	(0.96)
Earnings*%Audit Committee Independence	0.92					
	(1.95)*					
Earnings*100% Audit Committee Independence		1.25				
		(3.77)***				
Earnings*%Non-accounting financial experts			−0.46			
			(−1.25)			
Earnings*%Accounting financial experts				0.98		
				(2.29)**		
Earnings*%Legal experts					1.56	
					(1.88)*	
Earnings*Majority AF-L expert						0.94
						(2.55)**
Earnings*Size	0.06	−0.03	−0.03	−0.08	−0.04	−0.05
	(0.85)	(−0.82)	(−0.71)	(−1.95)*	(−0.99)	(−1.26)
Earnings*Leverage	0.47	0.66	0.19	0.20	0.45	0.56
	(1.17)	(1.66)*	(0.4)	(0.46)	(1.11)	(1.42)
Earnings*Market-to-Book	0.34	0.15	0.47	0.35	0.37	0.26
	(1.48)	(0.68)	(2.04)**	(1.57)	(1.63)	(1.16)
%Audit Committee Independence	12.88					
	(1.18)					
100% Audit Committee Independence		3.45				
		(0.52)				
%Non-accounting financial experts			−8.43			
			(−0.83)			
%Accounting financial experts				8.56		
				(0.89)		
%Legal experts					11.17	
					(0.72)	
Majority AF-L expert						9.5
						(1.5)
Size	−0.78	−1.29	−0.3	0.47	−0.72	0.01
	(−0.36)	(−0.6)	(−0.14)	(0.22)	(−0.33)	(0.01)
Leverage	−6.02	−5.50	−4.23	−2.99	−6.35	−8.03
	(−0.5)	(−0.47)	(−0.35)	(−0.25)	(−0.53)	(−0.69)
Market-to-Book	−1.07	−0.97	−0.58	−0.63	−0.74	−0.66
	(−0.77)	(−0.72)	(−0.41)	(−0.45)	(−0.53)	(−0.49)
R^2	0.25	0.28	0.23	0.25	0.24	0.27
N	225	225	225	225	225	225

Table 9

Audit committee characteristics and earnings informativeness for low cash flow rights firms.

This table presents a regression analysis of the relation between audit committee composition and earnings informativeness as measured by the earnings–return relation when cash flow rights are low compared to the median value. The dependent variable, CAR, is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. Earnings equals reported net earnings for fiscal year 2000 divided by the market value of equity at the beginning of 2000. Voting Rights is the sum of the direct and indirect voting rights (a detailed description is provided in Appendix A). %Audit Committee Independence is the number of independent directors over the total number of directors on the audit committee or number of independent directors over total number of directors in the absence of an audit committee. 100% Audit Committee Independence equals one when the audit committee of a company consists entirely of independent directors and zero, otherwise. %Non-accounting financial experts is the number of independent directors who are currently or were previously employed as executives in other publicly held corporations over the total number of directors on the audit committee. %Accounting financial experts is the number of independent directors with either experience as a Chief Financial Officer or a Certified Public Accountant over the total number of directors on the audit committee. %Legal experts is the number of independent directors who also practice law over the total number of directors on the audit committee. Majority AF-L expert equals one when more than 50% of the audit committee is represented by either accounting financial or legal experts. Size is the natural logarithm of the book value of assets in millions of U.S. dollars at the beginning of 2000. Market-to-Book is the market value of equity divided by the book value of total assets at the beginning of 2000. Leverage is total liabilities divided by total assets at the beginning of 2000. All regressions country and industry fixed effects (not reported). T-values are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Dependent variable: CAR					
Country and industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	−67.55	−66.96	−65.62	−64.79	−61.63	−59.27
	(−3.29)***	(−3.33)***	(−3.26)***	(−3.19)***	(−3.07)***	(−2.90)***
Earnings	1.84	1.86	1.45	1.68	1.12	1.00
	(1.05)	(1.10)	(0.84)	(1.00)	(0.63)	(0.59)
Earnings*%Audit Committee Independence	−0.11					
	(−0.21)					
Earnings*100% Audit Committee Independence Dummy		−0.12				
		(−0.56)				
Earnings*%Non-accounting financial experts			0.47			
			(0.71)			
Earnings*%Accounting financial experts				0.09		
				(0.27)		
Earnings*%Legal experts					0.49	
					(0.87)	
Earnings*Majority AF-L expert						0.28
						(1.38)
Earnings*Size	−0.09	−0.89	−0.09	−0.09	−0.06	−0.04
	(−0.75)	(−0.56)	(−0.74)	(−0.71)	(−0.47)	(−0.33)
Earnings*Leverage	−0.16	−0.22	−0.05	−0.20	0.01	−0.31
	(−0.33)	(−0.45)	(−0.11)	(−0.40)	(0.02)	(−0.64)
Earnings*Market-to-Book	0.13	0.10	0.19	0.13	0.20	0.18
	(0.46)	(0.38)	(0.68)	(0.46)	(0.75)	(0.66)
%Audit Committee Independence	1.33					
	(0.16)					
100% Audit Committee Independence		2.25				
		(0.43)				
%Non-accounting financial experts			−2.57			
			(−0.29)			
%Accounting financial experts				−4.93		
				(−0.72)		
%Legal experts					−11.42	
					(−0.91)	
Majority AF-L expert						−6.32
						(−1.47)
Size	3.09	3.06	3.12	3.09	2.98	2.80
	(2.05)**	(2.04)**	(2.07)**	(2.06)**	(2.00)**	(1.87)*
Leverage	5.35	5.92	4.33	5.59	3.67	6.92
	(0.88)	(0.96)	(0.70)	(0.91)	(0.6)	(1.14)
Market-to-Book	−0.93	−0.90	−0.96	−0.91	−1.03	−0.99
	(−1.98)**	(−1.92)*	(−2.05)**	(−1.96)*	(−2.22)**	(−2.13)**
R^2	0.28	0.28	0.28	0.28	0.29	0.29
N	225	225	225	225	225	225

Table 10
Robustness tests of audit committee characteristics, voting rights, and earnings informativeness.

This table presents a regression analysis of the relation between audit committee composition and voting rights on earnings informativeness as measured by the earnings–return relation, controlling for other factors related to earnings quality. The dependent variable, CAR, is the cumulative 12-month market-adjusted stock return for the 12 months ending on the earliest report date for a firm's 2000 fiscal year earnings. Earnings equals reported net earnings for fiscal year 2000 divided by the market value of equity at the beginning of 2000. Voting Rights is the sum of the direct and indirect voting rights (a detailed description is provided in Appendix A). 100% Audit Committee independence equals one when all audit committee members are independent directors and zero, otherwise. Majority AF-L expert equals one when more than 50% of the audit committee is represented by either accounting financial or legal experts. Audit Committee size equals the number of directors on the audit committee. Audit meeting frequency is the number of time the audit committee meets during the fiscal year. Board size is the total number of directors on the board. Board independence is the number of independent directors dividend by board size. CEO/Chairman duality equals one when the CEO serves as Chairman of the board and zero, otherwise. Big 5 Auditor equals one when the company's auditor is a Big 5 Accounting firm and zero, otherwise. Size is the natural logarithm of the book value of assets in millions of U.S. dollars at the beginning of 2000. Market-to-Book is the market value of equity divided by the book value of total assets at the beginning of 2000. Leverage is the total liabilities divided by total assets at the beginning of 2000. All regressions include country and industry fixed effects (not reported). T-values are reported in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Independent variables	Dependent variable: CAR			
Country and industry fixed effects	Yes	Yes	Yes	Yes
Intercept	−25.06	−29.88	−34.61	−31.71
	(−1.20)	(−1.40)	(−1.53)	(−1.33)
Earnings	2.43	2.01	0.82	0.55
	(2.11)**	(1.66)*	(0.41)	(0.25)
Earnings*Voting Rights	−0.22	−0.34	0.26	0.58
	(−0.41)	(−0.75)	(0.38)	(0.85)
Earnings*Cash Flow-to-Voting Rights	0.52	0.44	0.03	0.28
	(1.27)	(1.39)	(0.05)	(0.42)
Earnings*100% Audit Committee Independence	0.45		0.31	
	(1.98)**		(1.67)*	
Earnings*Majority AF-L expert		0.52		0.57
		(2.14)**		(2.23)**
Earnings*Audit Committee Size	0.02	0.02	−0.24	−0.18
	(0.17)	(0.22)	(−1.36)	(−0.99)
Earnings*Audit Meeting Frequency			0.23	0.23
			(2.06)**	(2.29)**
Earnings*Board Size	0.03	0.02	0.08	0.09
	(0.53)	(0.36)	(1.00)	(1.00)
Earnings*Board Independence	−0.52	−0.88	0.44	0.49
	(−0.53)	(−0.95)	(0.37)	(0.41)
Earnings*CEO/Chairman Duality	−0.36	−0.22	−0.248	−0.28
	(−1.50)	(−1.03)	(−1.24)	(−1.33)
Earnings*Big 5 Auditor	−0.59	−0.29	−0.67	−0.50
	(−1.43)	(−0.58)	(−1.51)	(−1.03)
Earnings*Size	−0.12	−0.11	0.01	0.05
	(−1.49)	(−1.48)	(0.06)	(0.27)
Earnings*Leverage	0.08	0.21	0.47	0.33
	(0.18)	(0.48)	(1.04)	(1.03)
Earnings*Market-to-Book	0.30	0.28	0.63	0.62
	(1.58)	(1.51)	(1.97)*	(1.84)*
Voting rights	0.03	0.04	−0.00	−0.02
	(0.32)	(0.33)	(−0.03)	(−0.19)
Cash Flow-to-Voting Rights	0.29	2.50	−3.40	−3.89
	(0.04)	(0.37)	(−0.50)	(−0.57)
100% Audit Committee	6.95		12.10	
	(1.75)*		(2.32)**	
Majority AF-L expert		1.94		2.34
		(0.89)		(0.61)
Audit Committee Size	1.27	1.24	2.52	2.39
	(0.70)	(0.68)	(1.14)	(1.43)
Audit Meeting Frequency			−2.31	−2.28
			(−2.12)**	(−2.05)**
Board Size	0.47	0.65	0.14	0.34
	(0.55)	(0.76)	(0.15)	(0.36)

Table 10 (*continued*)

Independent variables	Dependent variable: CAR			
Board Independence	−9.29	−3.02	5.31	7.79
	(−0.67)	(−0.22)	(0.41)	(0.59)
CEO/Chairman Duality	1.99	1.79	−4.73	−4.78
	(0.53)	(0.47)	(−1.30)	(−1.30)
Big 5 Auditor	−8.42	−10.64	−6.93	−7.56
	(−1.24)	(−1.49)	(−1.17)	(−1.24)
Size	0.49	0.69	1.12	1.32
	(0.33)	(0.47)	(0.60)	(0.70)
Leverage	4.02	2.40	2.85	1.33
	(0.66)	(0.39)	(0.38)	(0.17)
Market-to-Book	−0.98	−1.03	−3.34	−3.25
	(−1.81)[*]	(−1.90)[*]	(−1.33)	(−1.27)
R^2	0.26	0.26	0.29	0.28
N	435	435	263	263

(board) meets. For reporting firms, the audit committee (board) meets an average of 3.7 (5.4) times during the year.

The results of the robustness tests are presented in Table 10. The specifications in columns 1 and 2 exclude audit committee meeting frequency. The relation between audit committee full independence and composition continue to be positively related to the informativeness of earnings, while the additional control variables are not significantly related to earnings informativeness in our sample. The specifications in columns 3 and 4 include audit committee meeting frequency but only have data available for 263 observations. Our primary results continue to be robust. We additionally find a positive association between meeting frequency and earnings informativeness; however, we interpret this result with caution given the reduced sample size.

6. Conclusion

Much attention has been focused on corporate governance reforms by policy makers in East Asia since the Asian financial crisis. In particular, policy makers have focused on establishing independent audit committees. Similar policies have recently been adopted in the United States following scandals such as the Enron debacle. The basic argument underlying this push to establish audit committees is that capital markets will be stronger when confidence in accounting information is greater, and the audit committee is a natural place to look to for the improvement of the perceived quality of accounting information.

We examine a sample of East Asian firms to see whether audit committee independence is associated with stronger earnings informativeness as measured by the earnings–return relationship. Interestingly, we find some evidence that the negative relation between concentrated control and earnings informativeness that was documented in Fan and Wong (2002) prior to the Asian financial crisis persists in a more recent time period, even after many corporate governance reforms have been adopted to improve financial disclosure. We do, however, find that earnings informativeness is strengthened by the independence of the audit committee of a firm, but these results seem to be driven by either full independence or independent directors with accounting financial or legal expertise. Thus, the voluntary establishment of fully independent audit committees that can meet outside of CEO influence and the appointment of independent directors with certain expertise appear to be more effective in instilling investor confidence than the mandatory adoption of majority independence. Moreover, the increased reliability that is associated with the combination of financial or legal expertise and objectivity of audit committee directors appears to more than offset the detrimental effect that is associated with concentrated control.

Further analysis indicates that in East Asia, audit committee composition plays a more significant role in firms with concentrated cash flow ownership. We find higher abnormal stock performance and greater earnings informativeness for firms with both high cash flow rights and certain audit committee characteristics. Taken together, this suggests that controlling shareholders with high cash flow ownership can certify incentive alignment by voluntarily forming a fully independent audit committee or an audit committee with a majority of independent directors with certain expertise.
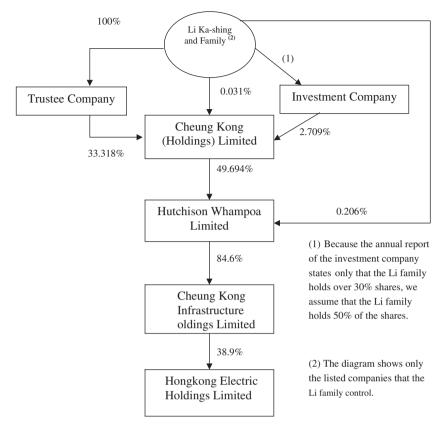
Diagram 1. The Li Ka-shing and Family Group—A Typical Example of a Pyramidal Structure.

The results in this paper have important policy implications. They suggest that an emphasis on majority audit committee independence may not be enough to strengthen monitoring or limit CEO influence. Instead, focusing on either full independence or expertise in addition to independence of directors who are appointed to the audit committee may be a more fruitful way to increase investor confidence in accounting information, especially when ownership is concentrated.

Appendix A. Calculation of control, or voting rights

The example in Diagram 1 illustrates how both direct and indirect voting rights are calculated. The family of Li Ka-shing and a trustee company that was founded by the Li family directly own 33.35% of the shares of Cheung Kong (Holdings) Limited. Another investment company owns an additional 2.71% of the shares of Cheung Kong (Holdings) Limited. Because the annual report of the investment company states only that the Li family holds over 30% of the shares, we assume that the Li family holds either 50% or 100% of the company in our calculations. This rule of thumb applies to any sample firm in a similar situation. For the sake of brevity, we only report values that are calculated assuming 50% ownership. Therefore, the voting rights of the Li family in Cheung Kong (Holdings) Limited are equal to 36.06%, which is the sum of

33.35% (direct control) and 2.71% (indirect control through the investment company). Likewise, the voting rights of the Li family in Hutchison Whampoa Limited, Cheung Kong Infrastructure Holdings Limited, and Hongkong Electric Holdings Limited are equal to 36.26%, 36.06%, and 36.06%, respectively.[11]

In contrast, the cash flow rights in Cheung Kong (Holdings) Limited turns out to be 34.7%, which equals 0.031% (the direct cash flow rights of the Li family) plus 33.318% $\times$ 100% (the portion of cash flow rights of the Li family in the trustee company) and 2.709% $\times$ 50% (the portion of cash flow rights of the Li family in the investment company). The cash flow rights of the other three companies can be derived by taking the product of the ownership stakes along the chain of Cheung Kong (Holdings) Limited. Therefore, the cash flow rights for the Li family in Hutchison Whampoa Limited is 17.452% [(34.704%*49.694%) + 0.206%]; 14.764% in Cheung Kong Infrastructure Holdings Limited (17.452%*84.6%); and 5.743% in Hongkong Electric Holdings Limited (14.764%*38.9%).

Panel B of Table 2 shows that, consistent with the findings of other studies, ownership is concentrated and there is a divergence between cash flow ownership and control. The average (median) voting rights of controlling shareholders in our sample is 46.5% (46.6%), but the average (median) cash flow rights is lower at 32.6% (30.5%). Thus, cash flow rights only account for 69.8% of voting rights on average.[12]

References

Agrawal, A., Chadha, S., 2005. Corporate governance and accounting scandals. Journal of Law and Economics 48, 371–406.

Anderson, R.C., Mansi, S.A., Reeb, D.M., 2004. Board characteristics, accounting report integrity, and the cost of debt. Journal of Accounting and Economics 37, 315–342.

Asian Corporate Governance Association, 2000. Building Stronger Boards and Companies in Asia, A Concise Report on Corporate Governance Policies and Practices.

Ball, R., Robin, A., Wu, J., 2003. Incentives versus standards: properties of accounting income in four East Asian countries. Journal of Accounting and Economics 36, 235–270.

Beasley, M.S., 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. The Accounting Review 71, 443–465.

Becker, C., DeFond, M., Jiambalvo, J., Subramanyam, K.R., 1998. The effect of audit quality on earnings management. Contemporary Accounting Research 15 (1), 1–24.

Carcello, J.V., Neal, T.L., 2003. Audit committee characteristics and auditor dismissals following new going-concern audit reports. The Accounting Review 78, 95–117.

Chen, C.J.P., Jaggi, B., 2000. Association between independent non-executive directors, family control and financial disclosures in Hong Kong. Journal of Accounting and Public Policy 19, 285–310.

Chen, K.Y., Zhou, J., 2007. Audit committee, board characteristics, and auditor switch decisions by Andersen's client. Contemporary Accounting Research 24, 1085–1117.

Christie, A., Joye, M., Watts, R., 1993. Decentralization of the Firm: Theory and Evidence, Unpublished working paper (University of Rochester).

Claessens, S., Djankov, S., Lang, L.H.P., 2000. The separation of ownership and control in East Asian Corporation. Journal of Financial Economics 58, 81–112.

Claessens, S., Djankov, S., Fan, J., Lang, H.P., 2002. Disentangling the incentive and entrenchment effects of large shareholdings. Journal of Finance 57, 2741–2742.

Credit Lyonnais Securities Asia, 2004. CG Watch: Corporate Governance in Asia-Spreading the Word, Changing Rules in Asia.

Davidson III, W.N., Xie, B.X., Xu, W., 2004. Market reaction to voluntary announcements of audit committee appointments: the effect of financial expertise. Journal of Accounting and Public Policy 23, 279–293.

DeFond, M.L., Hann, R.N., Hu, X., 2005. Does the market value financial expertise on audit committees of boards of directors? Journal of Accounting Research 43, 153–193.

Faccio, M., Lang, L.H.P., 2002. The ultimate ownership in western European corporations. Journal of Financial Economics 65, 365–395.

Fan, J.P.H., Wong, T.J., 2002. Corporate ownership structure and the informativeness of accounting earnings in east Asia. Journal of Accounting and Economics 33, 401–425.

Francis, J., Maydew, E., Sparks, H., 1999. The role of big 6 auditors in the credible reporting of accruals. Auditing: A Journal of Practice and Theory 18, 17–34.

Francis, J., Schipper, K., Vincent, L., 2005. Earnings and dividend informativeness when cash flow rights are separated from voting rights. Journal of Accounting and Economics 39, 329–360.

Jensen, M.C., Meckling, W.H., 1992. Specific and General Knowledge, and Organizational Structure. In: Werin, L., Wijkander, H. (Eds.), Contract Economics, pp. 251–274.

Johnson, S., Boone, P., Breach, A., Friedman, E., 2000. Corporate governance in the Asian financial crisis. Journal of Financial Economics 58, 141–186.

Karamanou, I., Vafeas, N., 2005. The association between corporate boards, audit committees, and management earnings forecasts: an empirical analysis. Journal of Accounting Research 43, 453–486.

---

[11] These are calculated using the weakest link in the chain as the *Min* [49.694%, 36.06%] + 0.206%; the *Min* [84.6%, (min [49.694%, 36.06%] + 0.206%), 36.06%]; and the *Min* [38.9%, 84.6%, (min [49.694%, 36.06%] + 0.206%), 36.06%], respectively.

[12] If we assume 100% ownership in investment companies rather than 50% ownership, the divergence between cash flow and voting rights is smaller. In this case, cash flow rights represents 86.7% of voting rights.

Klein, A., 1998. Firm performance and board committee structure. Journal of Law and Economics 41, 275–303.

Klein, A., 2002. Economic determinants of audit committee independence. The Accounting Review 77, 435–453.

Krishnan, J., 2005. Audit committee quality and internal control: an empirical analysis. The Accounting Review 80, 649–675.

Krishnan, G.V., Visvanathan, G., 2009. Do auditors price audit committee's expertise? The case of accounting v.s. non-accounting financial experts. Journal of Accounting, Auditing and Finance 24, 115–144.

Krishnan, J., Wen, Y., Zhao, W., 2011. Legal expertise on corporate audit committees and financial reporting quality. The Accounting Review 86, 2099–2130.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 1998. Law and finance. Journal of Political Economy 106, 1113–1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. Journal of Finance 54, 471–517.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R., 2002. Investor protection and corporate valuation. Journal of Finance 57, 1147–1171.

Leuz, C., Nanda, D., Wysocki, P., 2003. Earnings management and investor protection: an international comparison. Journal of Financial Economics 69, 505–527.

McMullen, D.A., 1996. Audit committee performance: an investigation of the consequences associated with audit committees. Auditing: A Journal of Practice & Theory 15, 87–103.

Shivdasani, Anil, Yermack, D., 1999. CEO involvement in the selection of new board members: an empirical analysis. Journal of Finance 54, 1829–1853.

Shleifer, A., Vishny, R., 1997. A survey of corporate governance. Journal of Finance 52, 737–783.

Wang, D., 2006. Founding family ownership and earnings quality. Journal of Accounting Research 44, 619–656.

Warfield, T., Wild, J.J., Wild, K., 1995. Managerial ownership, accounting choices, and informativeness of earnings. Journal of Accounting and Economics 20, 61–91.

Xie, B., Davidson III, W.N., DaDalt, P.J., 2003. Earnings management and corporate governance: the role of the board and the audit committee. Journal of Corporate Finance 9, 295–316.

Yeh, Y.H., Woidtke, T., 2005. Commitment or entrenchment? Controlling shareholders and board composition. Journal of Banking and Finance 29 (7), 1857–1885 (July).

Yeh, Y.H., Lee, T.S., Woidtke, T., 2001. Family control and corporate governance: evidence from Taiwan. International Review of Finance 2, 21–48 (March).

Zain, M.M., Subramaniam, N., Stewart, J., 2006. Internal auditors' assessment of their contribution to financial statement audits: the relation with audit committee and internal audit function characteristics. International Journal of Auditing 10, 1–18.