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Concentrated Stock Ownership and Price-Leading-Earnings Effect in East Asia

Ying Zheng
Business School, Sun Yat-sen University,135 Xin Gang Xi Road, Guangzhou, 510275, China
E-mail of the corresponding author: zhengy26@mail.sysu.edu.cn

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Abstract
This study draws on the corporate governance literature to identify the important factor that underlies the stock price formation process and to explain cross-sectional difference in the extent to which future earnings information is capitalized in current stock returns. We examine the effect of stock ownership structure (i.e., divergence level of cash flow rights and voting rights) on the extent to which stock prices lead accounting earnings in nine East Asian economies: Hong Kong, Indonesia, Japan, Malaysia, Singapore, South Korea, Taiwan, Thailand, and the Philippines. We find that stock returns of firms with larger divergence between cash flow rights and voting rights incorporate future earnings news earlier than firms with smaller divergence between cash flow rights and voting rights. The results are robust to the control of size, past growth, loss, and the sign of current returns. Our results indicate the importance of ownership structure in explaining the cross-sectional variation in price informativeness about future earnings.
Keywords: Price-Leading-Earnings, Ownership Structure, East Asian Economies, Divergence between Cash Flow Rights and Voting Rights

1. Introduction

Recent research on value relevance of accounting earnings and earnings components in East Asian economies essentially adopts a view that earnings information is primarily reflected in stock returns contemporaneously(e.g., Fan and Wong, 2002). This view probably stems from the extant findings based on U.S. firms. However ownership structure in the U.S. is distinctively different from that of East Asian firms. Compared to their U.S. and U.K. counterparts, corporate ownership in East Asian firms is highly concentrated (La Porta et al., 1998). This highly concentrated ownership structure may cause stock prices to incorporate earnings information early. Consequently, the use of a contemporaneous association specification to test the value relevance of earnings information will need to be revaluated.

The objective of this study is to investigate the effect of stock ownership structure (i.e., divergence level between cash flow rights and voting rights) on the extent to which stock prices lead accounting earnings in nine East Asian economies: Hong Kong, Indonesia, Japan, Malaysia, Singapore, South Korea, Taiwan, Thailand, and the Philippines. Price-leading-eamings effect refers to the phenomenon that stock prices incorporate future earnings before they are released through financial statements. Price-leading-eamings effect has been a focus of earlier accounting studies in understanding the lower-than-expected contemporaneous association between stock returns and accounting earnings (Collins et al. 1994; Durnev et al., 2003; Kothari and Sloan, 1992; Warfield and Wild, 1992). Price-leading-earnings is an important issue because the informativeness of stock prices about future earnings implies the extent to which value-relevance information about a firm's prospects is available to investors and it incorporated in stock price (Haw et al, 2012) .This study provides new evidence on how corporate ownership structure in East Asian economies affects the extent to which prices lead accounting earnings.

Corporate share ownership can be viewed as a property rights arrangement through which the owner of the share is entitled to three types of rights (. First, the owner has the decision right of deploying corporate assets, i.e., the control or voting rights. Second, the owner has the right to earn income, i.e., the cash flow rights. And third, the owner has the right to transfer the share and the associated control and cash flow rights to another party (e.g., Fan and Wong, 2002). In this perspective, the value of share depends on how well its property rights are enforced. Since the enforcement of property rights is usually undertaken by both individual and the state, concentrated ownership will be observed in economies where property rights are not well enforced by the state (Shleifer and Vishny, 1997; La Porta et al., 1999). Therefore, the private enforcement of property rights is a probable reason for the concentrated ownership of East Asian corporations, which often confront weak legal systems, poor law enforcement, and corruption (Fan and Wong, 2002; Fan et al., 2010).

Corporate ownership in East Asia is highly concentrated, especially in a small number of influential families. And the controlling owners frequently possess less cash flow rights than voting rights because the

controlling owners can enhance their voting rights by pyramid structure or cross-holdings. Furthermore, top managers often come from the controlling families (Claessens, Djankov, and Lang, 2000). The concentration of ownership in controlling owners, their close ties to firm managers, and large divergence between cash flow rights and voting rights provide the controlling shareholders both incentives and abilities to acquire 'private' information about firms' operating, investing, and financing activities much sooner than the release of the financial statements. The demand for and resultant early acquisition of private management information suggest that stock prices can incorporate accounting information relatively early. The demand for private management information likely arises from the need of controlling shareholders to maximize their wealth by prompting the timely execution of strategic activities. Firms often have to undertake investments in either fixed assets or intangible assets on a timeliness basis since investment opportunities cannot be stored. But the benefits of these investments only slowly flow through accounting earnings after satisfying accounting recognition and measurement criteria, resulting in prices incorporating earnings information relatively early.

Alternatively, the concentration of ownership and the divergence between ultimate controlling shareholder's cash flow rights and voting rights may create an incentive for the ultimate controlling shareholders to expropriate minority shareholders. Expropriation of minority shareholders by controlling shareholders through pursuing pet investment projects and engaging in side-deals or insider trading creates the demand for private information on firms' investment opportunities prior to the disclosure of such information in financial statements. The perverse incentives arising from concentrated stock ownership will lead to stock prices capturing the private management information earlier than public disclosure of accounting earnings. Therefore, it is hypothesized that price-leading-eamings effect increases with the degree of divergence between cash flow rights and voting rights. East Asian economies provide an ideal setting to test this hypothesis because prior research (e.g., Claessens, Djankov, and Lang, 2000; La Porta et al., 1999;La Porta et al., 2002) has shown that there is considerable divergence between cash flow rights and voting rights in East Asian economies.

Using a sample of 5,519 firm-year observations in nine East Asian countries from 1990 to 1994, we perform different analyses to test the relation between firm-level ownership structure and the extent of price-lead-earnings. Empirical results reported in this study are consistent with our hypothesis. As expected, the sample firms exhibit highly concentrated ownership structure. More importantly, voting rights always exceed cash flow rights, especially in Japan, Indonesia, and Singapore. Consistent with Fan and Wong's (2002) findings, the informativeness of current earnings is negatively associated with the degree of divergence between cash flow rights and voting rights. However, stock returns of firms with higher level of divergence between cash flow rights and voting rights reflect future earnings much *earlier* than firms with lower level of such divergence. The effect of cash-vote divergence on price-leading-eamings is robust to the controls of firm size, past growth, loss, and the sign of current returns. Although observations in Japan account for approximately 70% of the full sample, the results remain similar when observations from Japan are excluded.

The effects of controlling shareholders' concentrated ownership and the cash-vote divergence on the extent of prices-leading-earnings effect in East Asia are fundamentally different from those in the U.S. or U.K., where the ownership structure of public enterprises is typically diverse and diffuse. A large number of small investors have little incentives or resources to acquire private management information when faced with the classic free-rider problem. Instead, they rely on disclosed financial statements as the main source of information about company performance. Further, stringent insider trading regulations mitigate managers' incentives to exploit minority shareholders' information disadvantage, further rendering financial statements as the major source of information on firm performance (Burgstahler et al, 2006; Leuz et al., 2003). Additionally, shareholders and creditors tend to operate at greater arms' length from managers, hence reducing the potential of stock prices incorporating earnings information early.

Our study contributes to the ongoing debates on the value relevance and quality of accounting information by providing new evidence on the effect of ownership structure on the extent to which prices lead accounting earnings. Extant literature remains relatively silent on this important question. Fan and Wong's study (2002) is perhaps most closely related to this study in that they examine the relations between earnings informativeness and the ownership structure of 977 companies in seven East Asian economies. However, Fan and Wong's study (2002) is incomplete in the sense that they only consider the contemporaneous price-earnings relation but ignore the stock returns could also reflect information other than current earnings. This study extends Fan and Wong's study (2002) by examining how ownership structure affects the relation between current returns and future earnings, in addition to contemporaneous price-earnings relation, in East Asian economies. Our study finds that stock returns of firms with the higher level of divergence between cash flow rights and voting rights reflect future earnings much *earlier* than firms with the lower level of such divergence. These findings indicate that market's anticipation of future earnings changes is most likely to be the important reason why the association between stock returns and earnings is weaker than predictions from theory in East Asia economies. In addition, our study adds to the growing body of literature on corporate governance and transparency. Our evidences reveal that ownership structure is an importance factor to influence company’s disclosure policy and

corresponding the transparency of information in weak institution environment.

The remainder of this paper proceeds as follows. Section 2 reviews prior research and develops the hypothesis. Sample selection process and data are described in Section 3. Section 4 presents main regression results for testing the hypothesis. Additional analyses are reported in Section 5. Section 6 makes a conclusion.

2. Literature Review and Hypothesis development

2.1 Literature review on ownership structure, earnings informativeness, and price-lead-earnings

Much of the literature on the role and functioning of the modem corporations is based on the assumption of widely dispersed ownership. This notion originally derives from Berle and Means (1932) and has been propagated by Baumol (1959), Jensen and Meckling (1976), and Grossman and Hart (1980). However, recent research on this line shows that some concentration of ownership does exist (La Porta et al., 1998; La Porta et al., 1999; Claessens, Djankov and Lang, 2000). Furthermore, the level of ownership concentration in some developed and most of the developing countries is even higher (La Porta et al., 1998; La Porta et al., 1999). For example, La Porta el al. (1998) show that the mean of ownership by the three largest shareholders is: Hong Kong 0.54, Indonesia 0.58, Japan 0.18, Malaysia 0.54, Singapore 0.49, South Korea 0.23, Taiwan 0.18, Thailand 0.47 and the Philippines 0.57, indicating the high ownership concentration in East Asian. To evaluate the potential agency problems between ultimate owners and minority shareholders, La Porta et al. (1999) and Claessens, Djankov and Lang (2000) examine whether the cash flow rights of the ultimate shareholders are substantially different from their voting rights. They show that control of East Asian corporations can be achieved with significantly less than an absolute majority share of the stock, as the probability of being a single controlling owner through holding only 20% of the stock is very high (above 80% across the four East Asian economies). This indicates the existence of separation of cash flow rights from control rights across the East Asian economies (Note 1). One example is Li Ka-Shing family conglomerate. For example, Li Ka-Shing family conglomerate consists of 25 companies. Hong Kong Electric，s ultimate owner is Li Ka-Shing family, which controls 34% of the vote with 2.5% of the cash flow rights. They use this to follow the ownership chain of Li Ka-Shing: Cheung Kong & Hutchision Whampoa & Cavendish International & Hong Kong Electric, where the weakest link in the chain is 34% control of Hong Kong Electric by Cavendish International. This example illustrates that there is a clear separation of cash flow rights from voting rights, especially among family-controlled firms and small firms. Claessens et al. (2000) also find top management of about 60% of not-widely-held firms is related to the controlling shareholder family. These findings have important implications for the abilities and incentives of controlling shareholders to expropriate minority shareholders and get private benefits through control rights. In sum, ownership in East Asian firms is highly concentrated and there is substantial divergence between cash flow rights and voting rights, while manager-owner conflicts are generally limited. The agency problems in concentrated ownership are the interest conflicts between major shareholders and minority shareholders.

Financial reporting and market regulatory systems in emerging markets are relatively primitive and incomplete compared to mature markets (Xiang, 1998). Ball, Kothari and Robin (2000) study the effect of international institutional factors on properties of accounting earnings. Ball, Robin and Wu (2002) hypothesize that the quality of reported financial information depends on the incentives faced by managers and auditors when preparing financial statements, in addition to the accounting standards under which they are prepared. Their results suggest that information quality is primarily determined by the underlying economic and political factors influencing managers and auditors' incentives, rather than by accounting standards. They further argue that perhaps the most salient institutional feature of these Asian economies that influences earning quality is the dominance of family ownership in these economies. This reduces the demand for transparency and quality of reported earnings and other accounting information. Several studies also indicate that ownership structure affects the informativeness of accounting earnings. Warfield et al. (1995) hypothesize that the level of managerial ownership affects both the informativenss of earnings and the magnitude of discretionary accounting accrual adjustments. They show that managerial ownership is positively associated with earnings' explanatory power for stock returns. El-Gazzar (1998) finds that the higher the institutional ownership, the lower the market reaction to earnings releases, after controlling for firms' market capitalization and the number of analysts following. This finding suggests that firms' ownership composition is an important determinant of the market's reaction to earnings releases. Fan and Wong (2002) used the theories of entrenchment effect, alignment effect and information effects to develop their hypothesis that for a given level of voting rights, an increase in the divergence between the controlling owner's degree of cash flow rights and voting rights decreases the informativeness of the firm's earnings. They find that the relationship between earnings and stock prices is negatively related to the ultimate owner's voting rights, as well as the degree of divergence between the ultimate owner's cash flow rights and voting rights.

Price informativeness (price-lead-earnings) is also an important aspect of information transparency for shareholders and investors (Note 2). The extent of price lead earnings dependent on firm characteristics, including firm size (Collins, Kothari, and Raybum, 1987; Freeman, 1987; Ayers and Freeman, 2000),

institutional ownership (Rajgopal et al. ,2002) (Note 3), analyst following (Ayers and Freeman ,2001), disclosure activity (Lundholm and Myers, 2002). In an international context, Ali and Hwang (2000) note that the association between stock returns and earnings is affected by intercountry differences, including bank-oriented versus market-oriented financial systems, government versus private accounting standard setters, British-American versus Continental accounting clusters, financial-tax alignment, and spending on auditing services. Haw et al. (2012) find that greater financial disclosure, higher quality earnings, and greater information dissemination through news media are associated with stock prices that are more informative about future earnings. Our study extends this line of research by investigate the association between firm-level ownership structure and price-lead-earning effects.

2.2 Hypothesis development

Most research on value relevance of accounting earnings and earnings components in East Asian economies adopts a view that earnings information is primarily reflected in stock returns contemporaneously. This view stems likely from the findings of existing literature on U.S. firms, and, to a less extent, U.K. firms, where firms' ownership structure is distinctively different from that of East Asian firms. To the extent that diffuse stock ownership of U.S. firms and increased arm's length transactions between managers and stakeholders of the firms reduce the potential for stock prices to incorporate earnings information early, using a contemporaneous association specification to test for the value relevance of earnings information can be justifiable. In light of the salient features in ownership structures in East Asian firms, however, the maintained assumption underlying a contemporaneous retum-eamings association specification need to be put into empirical tests.

The ownership of listed companies in East Asian economies is typically concentrated in the hands of large shareholders. The degree of ownership concentration affects the nature of contracting, creating agency problems between managers and outsides: the nature of the agency problems shifts away from manager-shareholder conflicts to conflicts between the controlling owner and minority shareholders. Once controlling owners achieve effective control, their ownership concentration has two incentive effects: entrenchment effect and alignment effect. When there is no separation between cash flow rights and voting rights, concentrating ownership beyond the minimum level for effective control enhances the alignment of interest and hence mitigates the entrenchment effect. But there is divergence between cash flow rights and voting rights, the controlling owners becomes entrenched with high level of control, while the low equity ownership level provides a low degree of alignment between the controlling owner and minority shareholder, which indicates that lower cash flow rights may fail to provide sufficient incentive alignment to curtail the entrenchment effect. Therefore, entrenchment effect dominates when cash flow rights and voting rights diverge. In this study divergence between cash flow rights and voting rights is proxied for the ownership structure.

In East Asian economies, concentrated control is achieved through stock pyramids and cross-shareholdings, which create a separation in cash flow rights and voting rights. And mangers in these firms always have close relation to large shareholding or are numbers of large shareholders families. Large shareholders have value-maximizing incentive and entrenchment incentive to search for private information. And ultimate owners have property rights to make decisions, earn income, and transfer shares to another party. Hence, ultimate owners have strong incentives to search for private information. Possibly, managers are always reluctant to provide private information to ultimate owners. Such private information can flow into stock prices (Ball, Kothari and Robin, 2000).

To the extent that controlling shareholders have incentives and capacity to access private information from corporate managers and that the divergence of cash flow rights and voting rights heightens such incentives, stock prices of firms that are controlled by these shareholders likely capture information in accounting earnings much *sooner* than the disclosure of financial statements, compared to stock prices of firms without such dominant controlling shareholders in place. Therefore, concentrated ownership structure in East Asian firms facilitates early acquisition of private management information, in result that stock prices reflect earnings information relatively earlier than the release of financial statements. The hypothesis of this study, in its alternative form, is stated as:

Hypothesis: The price-leading-eamings effect increases with the degree of divergence between ultimate owners' cash flow rights and voting rights.

3. Sample, data, and definitions of variables

3.1 Data and sample

The sample firms come from nine East Asian economies: Hong Kong, Indonesia, Japan, Malaysia, Singapore, South Korea, Taiwan, Thailand, and the Philippines. We only include sample firms that have sufficient ownership structure data (i.e., cash flow rights and voting rights), stock returns, net income and other financial data for empirical analysis. The data sources and sample selection process are described in Table 1. We collect stock returns and financial statement data from the Worldscope 2000 database. Sample firm-years should have

data available for annual earnings in year t-1, through t+3, market value of equity at the beginning of the year t, annual stock returns over the period from t to t+3. To mitigate the undue influence of outliers on regression estimates, we delete observations lying in the top or bottom percentile for the yearly distribution of lag earnings, current earnings, current return, future earnings, or future returns.

Table 1. Sample selection process

Sample selection process	No. of firm-year Obs. deleted	No. of firm-year obs. Remaining
Initial sample with financial data from 1990 to 1994 available from Worldscope database for nine East Asia countries.		11,679
After deleting observations with missing Sedol No.	(1,170)	10,509
After deleting observations with missing ownership data	(4,634)	5,875
After deleting observations without requisite data on control variables and extreme 2% value	(356)	5,519

In this study, we focus on ultimate ownership structure. An ultimate owner is defined as the shareholder who has the determining voting rights of the company and who is not controlled by anybody else. If a company does not have an ultimate owner, it is classified as widely held. We obtain the data on the ultimate shareholders, their levels of voting rights, and the extent of divergence between cash flow rights and voting rights from two sources. We first use the Worldscope 2000 database to identify the names and immediate holdings of all owners that hold at least 5% of a company's outstanding shares. However, in data collection process, we find that there are too many missing values on ownership data in Worldscope 2000. To avoid losing too many observations, we further collect ownership data for these observations from *Asian Company Handbook* published in 1998. Since ownership data in *Asian Company Handbook* typically lag the fiscal year end by two years, the *Asian Company Handbook* data closest to our sample period is thus 1996. In order to keep the cross-sectional structure of the ownership data, we also collect the ownership structure data from the Worldscope as of the end of 1996 fiscal year or the closest possible date. Finally, we obtain cash flow rights and voting rights data for 2,980 firms. While ownership structure data is relatively stable over time, the inconsistency between the ownership data and the financial statement data would nevertheless cause measurement error problem and thus lower the power of the tests. Therefore, the impact of ownership structure on price-leading-eamings effect would probably be even stronger than the results reported below.

To eliminate the Asia Crisis influence on the empirical tests, the sample excludes observations after 1994，since both lagged earnings and three-year-ahead stock returns

and earnings data are used to examine the price-leading-eamings effect. And pre-1990 data is also excluded because the ownership structures earlier than 1990 may differ much from the structures documented in 1996. Therefore, the sample period is from 1990 to 1994. Finally, there are 5,519 firm-years in the final sample. But the number of observations in Japan is 3,904, or approximately 70% of the full sample. So we further examine whether the overall results are driven by Japanese firms in sensitivity tests.

3.2 Descriptive statistics

Table 2. Descriptive statistics for main variables

	Mean	Std.	Min	25%	Median	75%	Max
R_{it}	0.014	0.370	-0.577	-0.217	-0.053	0.146	2.168
E_{it-1}	0.031	0.038	-0.184	0.015	0.026	0.044	0.196
E_{it}	0.031	0.046	-0.201	0.011	0.024	0.044	0.264
$E3_{it}$	0.097	0.193	-0.658	0.017	0.061	0.136	1.274
$R3_{it}$	0.024	0.554	-0.864	-0.313	-0.093	0.202	3.582
V	15.304	12.375	0	5	10	22	58
C	11.191	12.100	0	2	5	18	58
C/V	0.662	0.352	0	0.300	0.760	1	1
OWN_{it}	0.338	0.352	0	0	0.240	0.670	1

This table shows the descriptive statistics for main variables used in the regression tests. The full sample includes 5519 observations, spanning from 1990 to 1994 and covering firms from Hong Kong, Indonesia, Japan, Malaysia, Singapore, South Korea, Taiwan, Thailand, and the Philippines. Current returns (R_{it}) for year t are the annual returns for the 12-month period during the fiscal year. Lagged earnings (E_{it-1}) are net income for year t-1, scaled by market value at the end of year t-1. Current earnings (E_{it}) are net income for year t, scaled by market value at the end of year t-1. Future earnings ($E3_{it}$) are the sum of net income for the three years following the

current year (i.e. for years t+1, t+2 and t+3), scaled by market value at the end of year t-1. Future returns ($R3_{it}$) are the buy-and-hold returns for the three-year period following the current year. Voting rights (V) are voting rights level of the largest ultimate owner of firm i. C/V ratio is the ratio of cash flow rights over voting rights of the largest ultimate owner of firm i. Ownership structure (OWN_{it}) is 1 minus the ratio of cash flow rights over voting rights of the largest ultimate owner of firm i.

Table 2 presents descriptive statistics for the pooled financial and ownership data. The mean (median) value of annual stock returns is 1.4% (-5.3%). And the mean (median) of current earnings scaled by market value is 3.1% (2.6%). The mean (median) of future earnings and future returns are 9.7% (6.1%) and 2.4% (-9.3%), respectively. The variable of OWN_{it}, i.e., (1-cash flow rights/voting right), measures the degree of divergence between cash flow rights and voting rights. A value close to one of this variable indicates that cash flow rights are divergent from voting rights. Since the mean (median) of this variable is 0.338 (0.24), the data reveal that controlling owners frequently possess less cash flow rights than voting control rights in the nine East Asian economies examined in this study.

Table 3 presents summary statistics (only mean and median) of the variables by country. Although the overall concentration of ownership is high for the economies examined, there is considerable variation in this variable among these economies. With a mean value of 10.234 for voting rights, Japanese firms are characterized by widely-held ownership structure. On the other extreme, the mean value of voting rights for Thailand firms is 37.778, suggesting firms in Thailand are highly concentrated. The distribution of the degree of concentration of ownership structure is generally consistent with prior studies (e.g., La Porta et al., 1999; Claessens et al., 2002). Table 3 also reports the mean value of

Table 3. Mean (Median) of main variables by each country

	Obs.	R_{it}	E_{it-1}	E_{it}	$E3_{it}$	$R3_{it}$	V	C	C/V	OWN_{it}
Taiwan	53	0.137	0.046	0.051	0.145	0.011	23.491	19.981	0.824	0.176
		（0.067）	（0.041）	（0.04）	（0.128）	(-0.036)	（22）	（16）	（1）	（0）
South Korea	373	0.141	0.048	0.056	0.138	0.006	19.477	16.059	0.862	0.138
		（0.066）	（0.047）	（0.049）	（0.143）	(-0.144)	（17）	（13）	（1）	（0）
Thailand	91	0.193	0.059	0.072	0.256	-0.298	37.778	35.531	0.945	0.055
		（0.051）	（0.06）	（0.072）	（0.218）	(-0.513)	（40）	（36）	（1）	（0）
Hong Kong	346	0.269	0.089	0.107	0.427	0.506	29.902	25.494	0.865	0.135
		（0.22）	（0.09）	（0.102）	（0.372）	（0.342）	（26）	（26）	（1）	（0）
Indonesia	100	0.310	0.073	0.084	0.324	0.004	36.503	27.560	0.760	0.240
		(0.132)	(0.067)	(0.074)	(0.263)	(-0.241)	(35)	(26)	（0.818）	（0.182）
Philippines	48	0.335	0.056	0.063	0.282	0.009	23.813	21.083	0.882	0.118
		(0.169)	(0.050)	(0.056)	(0.209)	(-0.152)	（23）	（21）	（1）	（0）
Malaysia	291	0.284	0.045	0.055	0.256	0.610	31.540	26.595	0.855	0.145
		（0.132）	（0.045）	（0.052）	（0.223）	（0.533）	（32）	（24）	（1）	（0）
Singapore	156	0.182	0.044	0.052	0.202	0.357	26.332	18.764	0.707	0.293
		(0.058)	(0.041）	（0.049）	（0.178）	（0.111）	（24）	（18）	（0.727）	（0.273）
Subsample	1787	0.277	0.060	0.073	0.279	0.328	27.800	22.828	0.829	0.171
		(0.129)	(0.053)	(0.063)	(0.226)	(0.088)	(26)	(22)	(1)	(0)
Japan	3904	-0.072	0.020	0.015	0.032	-0.079	10.234	6.476	0.593	0.407
		(-0.098)	(0.022)	(0.018)	(0.041)	(-0.126)	(10)	(4)	(0.6)	(0.4)

This table presents the mean (median) of main variables for nine East Asian countries. Current returns (R_{it}) for year t are the annual returns for the 12-month period during the fiscal year. Lagged earnings (E_{it-1}) are net income for year t-1, scaled by market value at the end of year t-1. Current earnings (E_{it}) are net income for year t, scaled by market value at the end of year t-1. Future earnings ($E3_{it}$) are the sum of net income for the three years following the current year (i.e. for years t+1, t+2 and t+3), scaled by market value at the end of year t-1. Future returns ($R3_{it}$) are the buy-and-hold returns for the three-year period following the current year. Voting rights (V) are voting rights level of the largest ultimate owner of firm i. C/V ratio is the ratio of cash flow rights over voting rights of the largest ultimate owner of firm i. Ownership structure (OWN_{it}) is 1 minus the ratio of cash flow rights over voting rights of the largest ultimate owner of firm i.

Table 4. Correlation table

	R_{it}	E_{it-1}	E_{it}	$E3_{it}$	$R3_{it}$	V	C	C/V	OWN_{it}
R_{it}		0.243	0.349	0.419	0.006	0.191	0.209	0.118	-0.118
		(0.0001)	(0.0001)	(0.0001)	-0.6374	(0.0001)	(0.0001)	(0.0001)	(0.0001)
E_{it-1}	0.230		0.754	0.553	0.203	0.306	0.313	0.159	-0.159
	(0.0001)		(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
E_{it}	0.370	0.709		0.690	0.142	0.362	0.368	0.186	-0.186
	(0.0001)	(0.0001)		(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
$E3_{it}$	0.420	0.513	0.648		0.371	0.369	0.371	0.180	-0.180
	(0.0001)	(0.0001)	(0.0001)		(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
$R3_{it}$	0.027	0.207	0.194	0.442		0.113	0.113	0.043	-0.043
	(0.046)	(0.0001)	(0.0001)	(0.0001)		(0.0001)	(0.0001)	(0.0015)	(0.0015)
V	0.235	0.313	0.358	0.367	0.189		0.815	0.172	-0.172
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)		(0.0001)	(0.0001)	(0.0001)
C	0.227	0.308	0.351	0.353	0.179	0.907		0.657	-0.657
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)		(0.0001)	(0.0001)
C/V	0.123	0.156	0.177	0.174	0.083	0.242	0.532		-1.000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)		(0.0001)
OWN_{it}	-0.123	-0.156	-0.177	-0.174	-0.083	-0.242	-0.532	-1.000	
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	

This table presents the correlation matrix including Pearson correlation (Lower table) and Spearman correlation (Upper table). Current returns (R_{it}) for year t are the annual returns for the 12-month period during the fiscal year. Lagged earnings (E_{it-1}) are net income for year t-1, scaled by market value at the end of year t-1. Current earnings (E_{it}) are net income for year t, scaled by market value at the end of year t-1. Future earnings ($E3_{it}$) are the sum of net income for the three years following the current year (i.e. for years t+1, t+2 and t+3), scaled by market value at the end of year t-1. Future returns ($R3_{it}$) are the buy-and-hold returns for the three-year period following the current year. Voting rights (V) are voting rights level of the largest ultimate owner of firm i. C/V ratio is the ratio of cash flow rights over voting rights of the largest ultimate owner of firm i. Ownership structure (OWN_{it}) is 1 minus the ratio of cash flow rights over voting rights of the largest ultimate owner of firm i OWN_{it}, which measures the level of the divergence between cash flow rights and voting rights. This variable ranges from 0.055 (Thailand) to 0.407 (Japan). Since observations in Japan consist of the majority of the full sample, we also report the statistics for countries excluding Japan in the row of "Subsample" in Table 3. A comparison between subsample and Japan indicate that Japanese firms are different from firms in other economies for most of the variables. For example, the mean of current and future return for subsample firms is 27.7% and 32.8%, respectively. In contrast, stocks of Japanese firms earn negative returns during the sample period. Similarly, subsample firms also outperform Japanese sample firms in accounting earnings. Clearly, Japan could influence the overall results since Japanese firms account for more than 70% of the full sample and these firms are substantially different from other firms in both ownership structure and financial data. Therefore, we perform sensitivity tests to check whether the empirical results are robust to the exclusion of observations in Japan. The regression results based on the sample without Japanese firms are showed in Table 9 and we discuss the results in the Section 5.

Table 4 presents Pearson and Spearman correlation matrix for variables. As expected, current returns are significantly correlated with current earnings and future earnings. Consistent with Collins et al. (1994), future returns is significantly correlated with future earnings but unrelated to current earnings. Collins et al. (1994) provide the economic rationale for using eaming-to-price ratio, growth in investment, and future returns as proxies for the measurement errors in their equation. They argue that in using realized future earnings growth to explain returns in period t, the measurement error that is generated by event occurring in these future periods affects future earnings, but not anticipated at the end of period t. In an efficient market, these events will be reflected in future returns. If the unanticipated events lead to increased cash flows, the measurement error and future earnings will be higher and future returns will also be commensurately higher. As predicted, the divergence between cash flow rights and voting rights is significantly and negatively correlated to current earnings (E_{it}) and future earnings ($E3_{it}$).

3.3 Research design

To test the hypothesis that ownership structure affects the extent to which price leads earnings, we conduct tests in the following orders.

First, we perform the regression to examine the contemporaneous association between stock returns and accounting earnings in East Asian economies:

$R_{it} = a_o+a_1E_{it-i}+a_2E_{it}+$ (Fixed effects) + U_{it}, (1)

Where R_{it} is the raw annual returns for year t. E_{t-i} is measured as net income in year t-1deflated by market value of equity at the end of year t-1. E_{it} is current earnings, defined as net income in year t, deflated by market value of equity at the end of year t-1. We also include economy and year dummy variables to control for fixed effects of economies and year. Economy dummy benchmark is Taiwan and year dummy benchmark is 1994.

In the above equation (1), both lagged and current earnings are regressed on current returns. Without restricting the coefficients on lagged and current earnings to be the same, this approach is superior to the earnings change specification. If the magnitude of the coefficient on lagged earnings is similar to that on current earnings but in an opposite sign, then the time-series of earnings is perceived to be a random walk process by the market. A coefficient on lagged earnings that is close to zero would indicate that the market treats earnings time-series as a white noise process. In addition, including lagged earnings as an independent variable also facilitates controlling for possible delayed price reaction to earnings information in the prior year.

Fan and Wong (2002) show that the information content of current earnings decreases with the degree of divergence between cash flow rights and voting rights in seven East Asian economies. To confirm Fan and Wong's findings (2002) and validate our sample observations, we include an interaction term between current earnings and ownership structure in the following regression:

$R_{it} = a_o+a_1E_{it}+a_2OWN_{it}+a_3OWN_{it}*E_{it}+$ (Fixed effects) + U_{it}, (2)

Where, OWN_{it} is ownership structure, defined as the divergence between cash flow rights and voting rights, (1-C/V). Here, C and V are the cash flow rights and voting rights of the ultimate owners, respectively. And all other variables are defined as above. A negative coefficient on the interaction term between OWN_{it} and E_{it} would be consistent with Fan and Wong's study (2002).That is, concentrated ownership structure would lower the informativeness of accounting earnings with respect to contemporaneous stock returns.

The above two regressions focus on the contemporaneous association between stock returns and accounting earnings. This is incomplete since prices could lead earnings. Following Collins et al. (1994), we first regress current stock returns on both current earnings and future earnings to examine price-leading-eamings effect in East
Asian economies:

$R_{it} =b_o+b_1E_{it-1}+b_2E_{it}+b_3E3_{it}+b_4R3_{it}+$ (Fixed effects) $+U_{it}$, (3)

Where $E3_{it}$ is the sum of net income for the three years following year t, all deflated by market value of equity at the end of year t-1, $R3_{it}$ is the buy-and-hold returns for the three-year period following year t, and all other variables are defined as before. In the above equation (3), future earnings are defined as three-year-ahead earnings since prior research (e.g., Collins et al, 1994) suggests that including earnings beyond year t+3 does not add explanatory power. To facilitate the interpretation of the coefficients on future earnings variables, we aggregate earnings in year t+1 through t+3 into a single variable. And stock returns during the period between t+1 and t+3 are included in the regression to lower the measurement errors associated with unexpected earnings. A positive coefficient on $E3_{it}$ would suggest that the investors have anticipated part of future earnings. And the coefficient on $R3_{it}$ is expected to be negative since unanticipated events that lead to increased cash flows will be reflected in future returns. A negative sign ensures that irrelevant components positively related to future returns are removed from future earnings growth, leaving a better approximation to the changes n expectations of future earnings growth that occurred in period t (Collins et al, 1994).

Next, we use the below model specification to examine the effect of ownership structure on the extent of rice-leading-eamings. The regression specification is as follows:

$R_{it} = C_o + C_1E_{it-1} + C_2E_{it} + C_3E3_{it} + C_4R3_{it} + C_5OWN_{it} + C_6OWN_{it} * E_{it-1}$
$+ C_7OWN_{it}*E_{it}+C_8OWN_{it}*E3_{it}+C_9OWN_{it}*R3_{it}+$(Fixed effects) + U_{it} (4)

Where all the variables are defined as above. The hypothesis of this study predicts that price-leading-eamings effect increases with the degree of divergence between cash flow rights and voting rights. Therefore, the coefficient on the interaction between future earnings ($E3_{it}$) and OWN_{it} is expected to be positive. Equation (4) also investigates whether the divergence between cash flow rights and voting rights reduces the ability of current earnings to explain current returns. A negative coefficient on OWN_{it} and current earnings (E_{it}) would be consistent with results of Fan and Wong (2002), after price-leading-eamings effect is controlled for.

4. Regression results

In this section, we use Equation (1) –Equation (4) to test the hypothesis that the ownership structure affects the extent to which the price incorporates the future earnings.

Table 5. Ownership structure and informativeness of current earnings

Independent	Equation(1)	Equation (2)
Intercept	0.088**	0.066*
	(2.373)	(1.733)
E_{it-1}	-0.839***	
	(-3.966)	
E_{it}	2.700***	2.571***
	(13.635)	(12.332)
OWN_{it}		0.012
		(1.068)
$OWN_{it}*E_{it}$		-0.989***
		(-2.633)
Fixed Effects		
HongKong	0.077*	0.056
	(1.732)	(1.224)
Indonesia	0.132*	0.128*
	(1.931)	(1.864)
Japan	-0.077**	-0.063*
	(-2.079)	(-1.689)
South Korea	0.065	0.063
	(1.610)	(1.556)
Malaysia	0.177***	0.179***
	(3.800)	(3.809)
Philippines	0.175*	0.169*
	(1.704)	(1.652)
Singapore	0.112***	0.121***
	(2.621)	(2.782)
Thailand	0.001	-0.008
	(0.020)	(-0.114)
1990	-0.403***	-0.407***
	(-23.835)	(-24.133)
1991	-0.197***	-0.200***
	(-18.044)	(-18.181)
1992	-0.273***	-0.280***
	(-24.988)	(-25.473)
1993	0.047***	0.038***
	(3.477)	(2.832)
Adjusted R^2	0.332	0.330
F-value	196.68	182.14
(P-value)	(<0.0001)	(<0.0001)

This table presents the regression results of current returns on current earnings and interaction with ownership structure for the sample with 5,519 firm-year observations. White-adjusted t-statistics are in parentheses. *,**, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 5 provides regression estimates for contemporaneous price-earnings relations. Throughout the study, we report White-adjusted t-statistics for all coefficients. The First column reports the results of equation (1), which examines the contemporaneous association between stock returns and accounting earnings. The estimated coefficient of current earnings (E_{it}) is significantly positive, suggesting current earnings are informative in East Asian economies. The second column are the results for equation (2), which replicates Fan and Wong's (2002) study on the impacts of ownership structure on the informativeness of contemporaneous earnings with respect to stock returns. The coefficient on the interaction term between the divergence between cash flow rights and voting rights and current earnings [$OWN_{it}*E_{it}$] is significantly negative, suggesting higher level of divergence between cash flow rights and voting rights reduces the informativeness of current earnings. This is consistent with the evidence provided by Fan and Wong (2002).

Fan and Wong (2002) use CV, i.e., cash flows rights/voting rights, which is inversely related to cash-voting rights divergence, to investigate the effect of separation of cash flow rights from voting rights on the informativeness of earnings. They report a significantly positive coefficient on [$CV*E_{it}$]. Therefore, our study successfully replicates Fan and Wong's results, although the sample used in this study is different from theirs. Fan and Wong's (2002) sample includes 3752 firm-year observations, spanning between 1991 and 1995 and coving 977 firms from Hong Kong, Indonesia, Malaysia, Singapore, South Korea, Taiwan, and Thailand.

Table 6. Ownership structure and price-lead-earnings

Variable	Equation (3)	Equation (4)
Intercept	0.045	0.037
	(1.291)	(1.072)
E_{it-1}	-0.891***	-0.793***
	(-4.150)	(-2.607)
E_{it}	1.533***	1.954***
	(7.290)	(6.270)
$E3_{it}$	0.642***	0.543***
	(12.032)	(8.157)
$R3_{it}$	-0.111***	-0.094***
	(-9.809)	(-6.720)
OWN_{it}		0.006
		(0.430)
$OWN_{it}*E_{it-1}$		-0.415
		(-0.765)
$OWN_{it}*E_{it}$		-1.474***
		(-2.771)
$OWN_{it}*E3_{it}$		0.416***
		(2.746)
$OWN_{it}*R3_{it}$		-0.071**
		(-2.383)
Fixed Effects		
HongKong	0.011	0.003
	(0.248)	(0.060)
Indonesia	0.050	0.043
	(0.789)	(0.685)
Japan	-0.063*	-0.059*
	(-1.850)	(-1.733)
South Korea	0.064*	0.060
	(1.677)	(1.576)
Malaysia	0.171***	0.169***
	(3.837)	(3.801)
Philippines	0.099	0.099
	(0.999)	(1.019)
Singapore	0.105***	0.107***
	(2.607)	(2.646)
Thailand	-0.082	-0.082
	(-1.317)	(-1.332)
1990	-0.334***	-0.333***
	(-18.816)	(-18.956)
1991	-0.174***	-0.173***
	(16.219)	(-16.171)
1992	-0.244***	-0.241***
	(-22.903)	(-22.744)
1993	0.072***	0.076***
	(5.367)	(5.656)
F-value		6.20
		(<0.0001)
Adjusted R^2	0.383	0.386
F-value	215.00	166.06
(P-value)	(<0.0001)	(<0.0001)

This table presents the regression results of current returns on aggregated current future earnings and interaction with ownership structure for the sample with 5,519 firm-year observations. White-adjusted t-statistics are in parentheses. *,**, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 6 presents evidence on price-leading-earnings effect and how ownership structure affects the extent to which prices lead earnings. The first column presents results for equation (3), where current returns are regressed on current earnings (E_{it}) and future earnings ($E3_{it}$). This equation serves as a benchmark model for

equation (4), which examines the impacts of ownership structure on price-leading-eamings effect. Consistent with prior research on price-leading-earnings effect, the coefficient on future earnings ($E3_{it}$) is significantly positive in equation (3), suggesting that future earnings news is impounded into current returns. And the significantly negative coefficient on future returns ($R3_{it}$) indicates that proxying expected future earnings by realized future earnings contains measurement errors and part of such errors are removed by future returns. Overall, the results for equation (3) are consistent with Collins et al. (1994), suggesting that current stock returns incorporate future earnings information in East Asian economies.

The second column in Table 6 reports the extent to which ownership structure affects the price-leading-eamings in East Asian economies. The coefficients on both current earnings (E_{it}) and future earnings ($E3_{it}$) are significantly positive, suggesting current stock returns reflect information in both current and future earnings. And the coefficient on the interaction between current earnings and the divergence between cash flow rights and voting rights [OWN_{it} * E_{it}] is significantly negative. Therefore, as Fan and Wong (2002) argue, the divergence between cash flow rights and voting rights lowers the informativeness of current earnings with respect to current returns. However, the coefficient on the interaction between the divergence measure and future earnings [OWN_{it} * $E3_{it}$] is significantly positive ($p<0.01$), suggesting that stock prices of firms with greater divergence between cash flow rights and voting rights incorporate future earnings earlier than those of firm with smaller such divergence. Therefore, the results in Table 5 support the hypothesis of this study.

The adjusted R^2 increases slightly from 38.3% in equation (3) to 38.6% in equation (4). Therefore, the ownership structure variable provides little incremental explanatory power to the price-leading-earnings model [i.e., equation (3)]. However, the F-test for the joint significance of OWN, $OWN*E_{it-1}$, $OWN*E3_{it}$, and $OWN*R3_{it}$ has a p-value of 0.0001. This suggests that ownership structure does add explanatory power to the variations in current stock returns.

5. Additional tests

5.1 Controlling for firm-specific factors

Prior research has documented that the magnitude of earnings response coefficient is related to several factors such as past growth, firm size, and the presence of losses. Since these firm-specific characteristics could be correlated with the ownership structure measure, the effect of ownership structure on the informativeness of current and future earnings with respect to stock returns could result from correlated but omitted variable problems. For instance, size is an important conditioning variable to test the information content of future earnings with respect to stock returns (Collins, Kothari, and Raybum, 1987; Freeman, 1987; Ayers and Freeman, 2000). To examine whether the omission of these characteristics variables has biased the coefficients on variables of interest, we include both the main effect of each characteristics variables and the interaction term between these characteristics variables and the variables of interest in the following regression:

$$R_{it} = C_0 + C_1E_{it-1} + C_2E_{it} + C_3E3_{it} + C_4R3_{it} + C_5OWN_{it} + C6OWN_{it}*E_{it-1} + C_7OWN_{it}*E_{it} + C_8OWN_{it}*E3_{it} + C_9OWN_{it}*R3_{it} + C_{10}CONTROL + C_{11}CONTROL*E_{it-1} + C_{12}CONTROL*E_{it} + C_{13}C0NTROL*E3_{it} + C_{14}CONTROL*R3_{it} + (Fixedeffects) + U_{it} \quad (5)$$

Where, CONTORL is the firm characteristic variables. They are defined as:
Loss = an indicator variable that is set equal to 1 when net income is negative and zero otherwise,
Growth = the percentage growth in the firm's total assets from year t-1 to year t,
Size = the natural log of market value of equity at the end of year t-1, and
Sign of R_{it} = an indicator variable that is set equal to 1 when current returns are negative and zero otherwise. And all other variables are defined as above.

The control of loss is motivated by Hyan's (1995) finding that earnings response coefficient is close to zero when firms report losses. And Collins and Kothari (1989) report that high-growth firms tend to have higher earnings response coefficient. While there is no reliable theoretical and empirical evidence suggesting that firm size is related to the magnitude of earnings response coefficient, firm size could be correlated with other firm characteristics. Therefore, we also control for firm size in the above regression. In addtion, Basu (1997) shows that, under the conservatism principle, accounting earnings reflect bad news much faster than good news, where good and bad news are proxied by the sign of the stock returns. To take the impacts of conservatism into account, we also include the dummy variable indicating negative stock returns in the above regression model.

Table 7. Ownership structure and price-lead-earnings: adding interaction control

	Loss	Growth	Size	Sign of R_{it}
Intercept	-0.006	0.051	-0.412***	0.208***
	(-0.176)	(1.457)	(-6.456)	(7.829)
E_{it-1}	-1.030***	-0.991***	0.736	-1.137***
	(-3.083)	(-3.159)	(0.485)	(-3.414)
E_{it}	3.054***	1.995***	1.661	1.499***
	(8.918)	(6.123)	(0.924)	(4.213)
$E3_{it}$	0.507***	0.492***	-0.100	0.519***
	(7.873)	(7.247)	(-0.278)	(7.225)
$R3_{it}$	-0.092***	-0.091***	0.179**	-0.131***
	(-6.667)	(-5.905	(2.459)	(-7.999)
OWN_{it}	-0.009	0.003	0.018	0.002
	(-0.688)	(0.256)	(1.307)	(0.242)
$OWN_{it}*E_{it-1}$	-0.495	-0.438	-0.561	0.031
	(-0.869)	(-0.813)	(-1.044)	(0.073)
$OWN_{it}*E_{it}$	-0.783	-1.374***	-1.395***	-0.708*
	(-1.389)	(-2.553)	(-2.625)	(-1.783)
$OWN_{it}*E3_{it}$	0.415***	0.400***	0.397***	0.251**
	(2.633)	(2.696)	(2.705)	(1.978)
$OWN_{it}*R3_{it}$	-0.069**	-0.076**	-0.054*	-0.024
	(-2.298)	(-2.566)	(-1.847)	(-1.087)
Control	0.035**	-0.088**	0.026***	-0.371***
	(2.069)	(-2.432)	(8.347)	(-38.272)
Control*E_{it-1}	0.868**	1.808**	-0.087	0.901***
	(2.090)	(2.181)	(-0.951)	(2.845)
Control*E_{it}	-2.949***	-0.492	0.012	-1.029***
	(-6.202)	(-0.746)	(0.109)	(-3.170)
Control*$E3_{it}$	-0.110	0.223***	0.039*	-0.467***
	(-0.716)	(2.871)	(1.817)	(-6.494)
Control*$R3_{it}$	-0.048	-0.003	-0.017***	0.100***
	(-1.091)	(-0.106)	(-3.913)	(6.200)
Fixed Effects				
Hong Kong	-0.048	-0.001	0.075*	-0.004
	(-1.091)	(-0.031)	(1.653)	(-0.112)
Indonesia	0.012	0.043	-0.027	0.052
	(0.192)	(0.686)	(-0.449)	(1.070)
Japan	-0.049	-0.060*	-0.092***	-0.046*
	(-1.439)	(-1.746)	(-2.753)	(-1.819)
South Korea	0.036	0.058	-0.003	0.014
	(0.967)	(1.520)	(-0.089)	(0.500)
Malaysia	0.162***	0.170***	0.251***	0.147***
	(3.698)	(3.812)	(5.503)	(4.296)
Philippines	0.087	0.099	0.145	0.122
	(0.911)	(1.009)	(1.516)	(2.528
Singapore	0.093**	0.109***	0.209***	0.052*
	(2.348)	(2.702)	(5.072)	(1.685)
Thailand	-0.104*	-0.081	-0.031	-0.008
	(-1.720)	(-1.308)	(-0.529)	(-0.171)
1990	-0.318***	-0.331***	-0.341***	-0.127***
	(-17.902)	(-18.817)	(-19.253)	(-9.728)
1991	-0.161***	-0.169***	-0.184***	-0.030***
	(-15.088)	(-15.456)	(-17.492)	(-3.491)
1992	-0.238***	-0.244***	-0.237***	-0.081***
	(-22.437)	(-22.856)	(-22.334)	(-9.192)
1993	0.075***	0.075***	0.082***	0.087***
	(5.635)	(5.591)	(6.112)	(8.075)
Adjusted R^2	0.400	0.389	0.399	0.623
F-value	142.40	135.85	142.07	352.35
(P-value)	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)

This table presents the regression results of current returns on aggregated current future earnings and interaction with ownership structure by adding additional control variables. White-adjusted t-statistics are in parentheses. *,**, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Results of the above regression are reported in Table 7, where each column presents results when one characteristic variable is controlled for. Across the columns, the coefficients on future earnings ($E3_{it}$) and current

earrings (E_{it}) remain to be significantly positive. And when earnings or stock returns are negative, the association between current returns or current earnings is much weaker. This finding is consistent with Hyan (1995) and Basu (1997). Furthermore, the coefficients on future earnings are significantly affected by growth and firm size. Most important for this study is that the coefficients on [OWN_{it}*E_{it}] and [OWN_{it}*$E3_{it}$] remain to be significantly negative and positive, respectively, after these characteristic variables are controlled for. Therefore, the main conclusion that stock returns of firms with higher level of divergence between cash flow rights and voting rights reflect future earnings earlier is not altered after loss, past growth, firm size, and the sign of stock returns are controlled for.

5.2 Year-by-year tests

We perform the main regression of this study by year in this section. This is motivated by two considerations. First, as mentioned above, there is inconsistency between ownership structure data and financial data due to the difficulty in collecting the ownership data. By-year regressions help to identify the direction of bias caused by the measurement error problem. Second, the overlap of the dependent variable, stock returns, among the observations could overstate the OLS t-values when there is cross-correlation among the regression residuals (Bernard, 1987). Therefore, I estimate the regression by year and infer the t-values by the time-series variations in the estimated yearly coefficients. Fama and MacBeth (1973) suggest that this approach is less biased in the presence of cross-correlated regression residuals.

Table 8. Ownership structure and price-lead-earnings: by year regression

	1990	1991	1992	1993	1994	Mean
Intercept	-0.489	-0.302	-0.21	0.292***	0.039	-0.134
	(-23.317)	(-2.361)	(-4.290)	-3.23	-0.889	(-0.98)
E_{it-1}	-0.033	0.308	-0.71	-1.449**	-1.345***	-0.646*
	(-0.052)	-0.593	(-1.254)	(-2.262)	(-3.136)	(-1.85)
E_{it}	1.927***	2.096***	1.975***	1.683***	2.403***	2.017***
	-4.512	-4.245	-2.799	-2.811	-5.392	-17.15
$E3_{it}$	0.082	0.310***	-0.312**	0.666***	0.309***	0.336***
	-0.882	-3.033	-2.108	-5.346	-2.592	-3.58
$R3_{it}$	-0.051**	-0.041**	-0.042	-0.245***	-0.015	-0.079*
	(-2.049)	(-2.284)	(-1.512)	(-6.689)	(-0.485)	(-1.88)
OWN_{it}	-0.071	-0.042	-0.007	-0.063**	-0.022	-0.041***
	(-1.182)	(-1.587)	(-0.388)	(-2.018)	(-0.807)	(-3.43)
OWN_{it}*E_{it-1}	0.377	-0.582	0.802	1.811	-0.724	0.337
	-0.216	(-0.528)	-1.023	-1.609	(-0.966)	-0.72
OWN_{it}*E_{it}	-1.363	0.886	-1.802*	-2.110**	-1.49	-1.176**
	(-0.883)	-0.662	(-1.800)	(-2.036)	(-1.838)	(-2.21)
OWN_{it}*$E3_{it}$	0.421	0.2	0.244	0.437	0.423	0.345***
	-0.685	-0.857	-0.944	-1.527	-1.645	-6.8
OWN_{it}*$R3_{it}$	-0.063	-0.066	-0.075	0.185***	-0.151**	-0.034
	(-0.712)	(-1.475)	(-1.362)	-2.645	(-2.100)	(-0.59)
Fixed Effects						
Hong Kong	0.348	0.129	0.275	-0.008	-0.243	0.1
	-0.187	-0.117	-0.078	-0.096	-0.067	-0.95
Indonesia	0.165	-0.198	0.136	0.17	-0.401	-0.059
	0.132	-0.158	-0.082	-0.103	-0.087	(-0.55)
Japan	0.148	0.11	-0.073	-0.285	0.066	-0.007
	-0.175	-0.112	-0.073	-0.09	-0.059	(-0.09)
South Korea	0.206	0.058	0.213	-0.083	0.097	0.098*
	-0.175	-0.115	-0.078	-0.095	-0.067	-1.81
Malaysia	0.466	0.198	0.121	0.281	0.113	0.236***
	-0.182	-0.116	-0.079	-0.097	-0.066	-3.62
Philippines	0.34	-0.158	0.375	0.434	-0.183	0.162
	-0.214	-0.177	-0.108	-0.124	-0.087	-1.18
Singapore	0.31	0.311	0.116	0.172	-0.094	0.163**
	-0.179	-0.115	-0.077	-0.096	-0.067	-2.18
Thailand	0.623	-0.333	0.174	-0.098	-0.318	-0.115
	0.555	-0.134	-0.087	-0.104	-0.08	(-1.19)
Obs.	197	1084	1308	1422	1508	5
Adjusted R^2	0.3702	0.3417	0.5081	0.5074	0.1581	
F-value	8.68	34.06	80.41	87.10	17.64	
(P-value)	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)	

This table presents the regression results of current returns on aggregated current future earnings and interaction with ownership structure across year. White-adjusted t-statistics are in parentheses. *,**, and *** denote significance at the 10%, 5%, and 1% level, respectively.

Table 8 reports the by-year regression results as well as the t-values computed by Fama-MacBeth (1973)

approach. There are two major findings. First, the coefficients on and the t-values of [OWN_{it}*E_{it}] and [OWN_{it}*$E3_{it}$] are larger in magnitude for the second half of the sample period. Since the ownership structure data used is close to the last year of the sample period, this pattern suggests that the effect of ownership structure on informativeness of current earnings and price-leading-eamings phenomenon could be even stronger if there is no measure error in the ownership data. Second, the Fama-MacBeth t-values for [OWN_{it}*E_{it}] and [OWN_{it}*$E3_{it}$] are significant at 5% or better level and their signs remain to be negative and positive, respectively. Therefore, the results reported in prior section are robust to the control of cross-sectional correlations of the regression residuals.

5.3 Exclusion of observations from Japan

Table 9. Ownership structure, earnings informativeness, and price-leading-earnings for subsample without Japan

Variables	Equation(1)	Equation (2)	Equation (3)	Equation (4)
Intercept	-0.106**	-0.130***	-0.129***	-0.131***
	(-2.554)	(-2.960)	(-3.142)	(-3.022)
E_{it-1}	-0.497		-0.398	-0.596
	(-1.530)		(-1.263)	(-1.560)
E_{it}	3.065***	2.963***	2.231***	2.657***
	(10.827)	(10.098)	(7.397)	(6.607)
$E3_{it}$			0.374***	0.294***
			(6.617)	(4.147)
$R3_{it}$			-0.107***	-0.093***
			(-6.197)	(-4.506)
OWN_{it}		0.079		-0.005
		(1.052)		(-0.073)
OWN_{it}*E_{it-1}				1.467
				(1.128)
OWN_{it}*E_{it}		-0.669		-2.622**
		(-0.806)		(-2.196)
OWN_{it}*$E3_{it}$				0.524***
				(2.187)
OWN_{it}*$R3_{it}$				-0.089
				(-1.574)
Fixed Effects				
Hong Kong	0.005	-0.003	-0.022	-0.024
	(0.100)	(-0.057)	(-0.458)	(-0.497)
Indonesia	0.085	0.078	0.036	0.019
	(1.235)	(1.142)	(0.559)	(0.297)
South Korea	0.057	0.060	0.055	0.054
	(1.311)	(1.377)	(1.280)	(1.251)
Malaysia	0.236***	0.240***	0.254***	0.254***
	(4.360)	(4.440)	(4.723)	(4.741)
Philippines	0.314***	0.312***	0.265***	0.262***
	(3.012)	(2.992)	(2.584)	(2.584)
Singapore	0.105**	0.103**	0.102**	0.100**
	(2.313)	(2.225)	(2.296)	(2.237)
Thailand	-0.084	-0.081	-0.122**	-0.119**
	(-1.432)	(-1.378)	(-2.067)	(-2.035)
1990	-0.267***	-0.271***	-0.163***	-0.161***
	(-9.806)	(-10.036)	(-4.821)	(-4.822
1991	-0.094***	-0.100***	-0.033	-0.033
	(-3.172)	(-3.438)	(-0.990)	(-1.008)
1992	-0.028	-0.033	0.003	0.006
	(0.917)	(-1.116)	(0.104)	(0.176)
1993	0.514***	0.509***	0.503***	0.503***
	(13.932)	(13.835)	(13.834)	(13.874)
Adjusted R^2	0.308	0.307	0.341	0.343
p_value	0.0001	0.0001	0.0001	0.0001

This table presents the regression results of current returns on aggregated current future earnings and interaction with ownership structure for subsample without firms in Japan. White-adjusted t-statistics are in parentheses. *,**, and *** denote significance at the 10%, 5%, and 1% level, respectively.

As shown in Table 3, Japanese observations represent a large portion of the full samples (about 70%) and ownership structure of Japanese firms is different from that of other eight economies. To ensure that the main

results are not driven by Japanese firms, we also estimate the regressions by a subsample that excludes observations from Japan. There are 1787 observations in this subsample. The main results are reported in table 9. Most of the results confirm those from the full sample except that the interaction between ownership structure and informativeness of current earnings appear to be sensitive to the exclusion of Japanese firms when future earnings are not included in the regression model (Column 2). For the full model reported in the last column, the coefficient on [OWN_{it}*$E3_{it}$] is still significantly positive and that on [OWN_{it}*E_{it}] still is significantly negative. Therefore, the main results of this paper are robust to the exclusion of Japanese firms.

6. Conclusion

This study hypothesizes that price-leading-earnings effect increases with the level of divergence between cash flow rights and voting rights, which is prevalent in East Asian economies. The explanation for this is controlling owners' private information incentives. Controlling shareholders have both incentives and capacity to access private information from corporate managers. And the divergence between cash flow rights and voting rights heightens such incentives. Consequently, stock prices of firms that are controlled by these shareholders capture information in accounting earnings sooner than the disclosure of financial statements compared to stock prices of firms without such dominant controlling shareholders in place.

Empirical results show that ownership structure has an important and significant impact on the association between stock returns and current as well as future earnings. Stock prices of firms with greater divergence between cash flow rights and voting rights incorporate future earnings earlier than stock prices of firms with smaller such divergence. At the same time, the results suggest that informativeness of current earnings decreases with the level of divergence between cash flow rights and voting rights, which is consistent with Fan and Wong's (2002) findings. These results are robust to controls of firm size, growth, loss, and the sign of stock returns. Prior studies have shown (e.g., Ball et al., 2000; Fan and Wong, 2002) that earnings reported by corporations in East Asian economies are of low quality, which is possibly resulted from the underlying economic and political factors influencing controlling owners' incentives. However, these studies focus on the contemporaneous association stock returns and accounting earnings. In contrast, this study documents that there is a positive effect of the divergence between cash flow rights and voting rights on price-leading-eamings in the East Asian economies. Given that price-leading-eamings effect is one aspect of market efficiency, this study has implications for the assessment of earnings quality as well as how corporate governance structure affects earnings quality.

Since it is important issue of how investors perceive the earning information and incorporate them into stock price, future research would deeply investigate the other important determinant factors, at firm level, industry level, and institution level, that underlie the stock price efficiency.

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Notes

Note 1. But different from the other East Asian firms that are typically family controlled, the dominant ultimate owners of Japanese firms are institutions, typically the main banks of industrial groups. Japanese firms' ownership structures are also different from those of the other East Asian firms in the degree of cash flow rights and voting rights divergence. This is one reason we need to perform the additional analyses for subsample without Japanese observations in Table 9.

Note 2. It is also an important contributing factor to the weak contemporaneous price-earning associations.

Note 3. Rajgopal et al. (2002) is the first study to demonstrate that stock prices reflect relatively more information about future earnings relative to current earnings as the percentage of institutional investors' shareholdings increases.

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