Insider Trading and Corporate Governance Structure: Evidence from Southeast Asia*

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Abstract

By examining the flow of the value-relevant information in annual earnings into stock price, we provide evidence that is consistent with the proposition that insiders of Southeast Asian companies controlled by the richest families are particularly aggressive in trading on their proprietary knowledge concerning this information. We find further support for this insider trading proposition based on tests that assume the presence of a strong incentive for insider trading (i) when there is a large change in earnings and (ii) before the first legal case in a country is brought against insider trading. We do not find similar evidence in the relatively well regulated market of Hong Kong or for family-controlled companies overall. Our test results are robust to controls for company-specific size, growth, and risk, as well as to alternative measures of the flow of information into stock price. These findings expand our understanding of how corporate governance structure affects the flow of information into stock price. In addition, these findings are consistent with the notion that insider trading leads to the incorporation of private information into stock price and improves the accuracy of stock price, which suggests that a company's stock price is more informative for companies in which insiders have relatively more opportunities and incentives to trade on their private information.

Keywords: Accounting earnings; Corporate governance structure; Insider trading; Southeast Asia

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1. Introduction

We examine whether the flow of the value-relevant information in annual earnings into stock price is consistent with the contention that insiders of the richest-family-controlled companies in Southeast Asia aggressively trade on their proprietary knowledge concerning this information. Examining this issue in Southeast Asia allows for a particularly rich analysis because of the region's corporate governance structure and its lack of enforcement of insider trading rules, as described in Limlingan (1986), Schwarz (1994), Seagrave (1996), Lingle (1997), Backman (1999), and Claessens, Djankov, and Lang (2000), among others. Specifically, Southeast Asia's corporate governance structure is characterized by family ownership and control of companies in conjunction with a concentration of wealth among a few families. Southeast Asian conglomerates controlled by the richest families typically consist of many diversified companies, with only a small percentage of these companies listed on stock exchanges. Moreover, even for the companies that are listed, the families retain majority ownership and control. As an example of the extent of the concentration of stock ownership among a few families, Claessens et al. (2000) report that in 1996, the five largest family groups in the Philippines (Indonesia; Thailand; Malaysia) control 42.8% (40.7%; 32.2%; 17.3%) of their respective countries' corporate sector in terms of market capitalization.

In conjunction with the preceding corporate governance structure, insider trading rules are weakly enforced in Southeast Asia. For example, Bhattacharya and Daouk (2002) report that the first legal case brought against insider trading occurred in 1996 (1996; 1993) in Indonesia (Malaysia; Thailand). Also, *AsiaWeek* (2000) states that as of March

2000, “in nearly 64 years of stock trading in Manila, no individual has ever been prosecuted, convicted or jailed for insider trading or price manipulation.”

Given the corporate governance structure and the enforcement environment just described, it is widely suspected that insiders of the richest-family-controlled conglomerates frequently trade on their private information, often through affiliated brokerages (Backman 1999). [1] As a result, we hypothesize that there is particularly aggressive insider trading in the equity of the publicly traded subsidiaries of Southeast Asian conglomerates controlled by very wealthy families.

A direct test of our insider trading hypothesis would be to examine data on insider trading activity. However, insider trading data are difficult to obtain for Southeast Asian markets and we would not expect such data to be accurate because (i) the data are generally compiled from reports filed by corporate insiders, who would presumably not self-report any illegal insider trades (Bainbridge 2000) and (ii) insiders of Southeast Asian companies often disguise their trades using conglomerate-owned brokerages and nominee accounts (*AsiaWeek* 2000).[2]

Due to the difficulty of obtaining reliable insider trading data, we proceed as follows. Using 1989 to 1996 *Global Vantage* data, we identify 913 company-year observations of companies in Indonesia, Malaysia, the Philippines, and Thailand that have complete data available for our tests. We partition these 913 observations into two groups. The first group

[1] Examples of suspected insider trading are detailed in Seagrave (1996), Backman (1999), *Business World* (2000), and *AsiaWeek* (2000), among others. Also, in interviews with more than a dozen brokers and analysts in the Philippines and Indonesia, at least half of the interviewees volunteered that a major portion of their analysis involved trying to identify trades by insiders to help their clients to mimic these trades.

[2] For example, in a recent insider trading scandal in the Philippines, a major owner of BW Resources used 32 trading accounts (11 of which were in code numbers), numerous personal associates, and eight member brokers to carry out his stock price manipulation scheme (*Business World* 2000).

is composed of the 174 observations that are related to companies controlled by Southeast Asia's richest families. The second group is composed of the remaining 739 observations.

To test the hypothesis that insiders of Southeast Asian companies controlled by the richest families are especially aggressive in trading on their proprietary knowledge concerning the value-relevant information in annual earnings, we compare the flow of this information into stock price for the companies in our sample that are controlled by the richest families with the flow for the companies that are not so controlled. We find that relative to other companies, the stock price for the companies controlled by the richest families reflects the information in earnings at an earlier time. This finding is consistent with the notion that insiders of the companies controlled by the richest families are particularly aggressive in trading on their proprietary knowledge of the information in earnings before these earnings are reported to outsiders.

To provide further evidence that our insider trading interpretation of the flow of the information in earnings into stock price is reasonable, we perform the following additional tests. First, Hong Kong is one of the most effectively regulated markets in Asia (La Porta, Lopez-de-Silanes, Shliefer, and Vishny 1998). As a result, relative to insiders of Southeast Asian companies, insiders of Hong Kong companies are likely to have fewer opportunities to trade on their private information. Therefore, if particularly aggressive insider trading for Southeast Asian companies controlled by the richest families explains the pattern of information flow into stock price that we observe, then we expect that this telltale pattern will be weak or nonexistent for Hong Kong companies. Our test results strongly support this expectation. Also, we find further support for the insider trading interpretation of our findings based on tests that assume the presence of a strong incentive for insider trading (i)

when there is a large change in earnings and (ii) before the first legal case in a country is brought against insider trading. Moreover, our test results are robust to controls for company-specific size, growth, and risk, as well as to alternative measures of the flow of information into stock price.

Most prior studies of insider trading use a short window test design and a sample of U.S. companies (e.g., Givoly and Palnon 1985; Damodaran and Liu 1993; Park, Jang, and Loeb 1995; Udpa 1996). A basic finding of this research is that a company's stock price reacts less to the announcement of corporate news if there is insider trading prior to the release of the news. Bhattacharya, Daouk, Jorgenson, and Kehr (2000) find similar evidence for shares of Mexican companies. Our study extends this prior research by examining whether a particular corporate governance structure in a non-U.S. setting is associated with especially aggressive insider trading.

Also, complementing the analysis in most prior related research, we use a long window rather than a short window test design. An advantage to this test design is that we are able to examine the flow of information into stock price both during the 12 months in which the events reflected in annual earnings generally occur (i.e., the period during which insider trading should occur) and during the period in which our sample companies disclose their annual earnings to the public, rather than only during the period in which annual earnings are publicly disclosed.

Overall, our results are consistent with the finding in prior studies that insider trading leads to the incorporation of private information into stock price and improves the accuracy of stock price (e.g., Cornell and Sirri 1992; Meulbroek 1992). Specifically, we find that value-relevant information flows into stock price earlier for companies in which

insiders have relatively more opportunities and incentives to trade on their private information, suggesting that stock price is more informative for such companies. Related to this observation, our results support the conjecture in Ball, Kothari, and Robin (2000a, p. 48) that "poor public disclosure does not necessarily impede the flow of information into stock prices, since the information flow can occur instead via the trading of informed insiders."

We organize the rest of the paper as follows. Section 2 describes the sample. Section 3 reports the primary test results. Section 4 presents the results of additional analyses. Section 5 summarizes our findings.

2. Sample description

Our investigation period is from 1989 to 1996, a period before the Asian economic crisis. We initially identify all companies in the Southeast Asian countries of Indonesia, Malaysia, the Philippines, and Thailand that are covered in both the *Global Vantage Industrial/Commercial Files*, which contain financial statement data, and the *Global Vantage Issue Files*, which contain monthly stock price data.[3] As in prior studies (e.g., Alford, Jones, Leftwich, and Zmijewski 1993; Ball et al. 2000a; Ball, Robin, and Wu 2000b), we restrict our analysis to companies in the *Global Vantage Industrial/ Commercial Files* to increase sample homogeneity. To be included in the study, a company-year observation must:

- have complete data needed to calculate annual earnings scaled by the beginning-of-the-year market value of equity, the change in scaled annual earnings, the stock price return, and test variables (described later) that proxy for company-specific

[3] We exclude Singapore from the Southeast Asian sample because corporate governance structure in Singapore is characterized by state rather than rich family control (e.g., only four of the 101 Singapore companies covered by *Global Vantage* are richest-family-controlled).

size, growth, and risk;[4] and

- be included in the ownership structure database described in Claessens et al. (2000) and have non-missing data for the following company-specific items reported in this database: whether or not a company's largest block shareholder is a family (with the family name identified if the largest block shareholder is a family) and a company's within-country relative size rank based on the market value of equity.[5]

The preceding selection procedures yield 913 company-year observations. These 913 observations are partitioned into two groups. The first group consists of company-year observations that involve companies controlled by a billionaire family included in the *Forbes* (1994; 1998) surveys on world billionaires. These companies are identified using the intersection of (i) the companies that are identified in the *Forbes* surveys as being controlled by a family included in the *Forbes* surveys and (ii) the companies in the Claessens et al. (2000) database that are coded as having a family included in the *Forbes* surveys as their largest block shareholder. The observations in this first group are referred to as RF-controlled (i.e., Richest-Family-controlled).

The second group consists of company-year observations that are not in the RF-controlled group. The observations in this group are referred to as non-RF-controlled. The ownership structure of the non-RF-controlled companies is less homogeneous than that of the RF-controlled companies because the non-RF-controlled sample includes companies controlled by "nonbillionaire" families as well as non-family-controlled companies (e.g., companies with dispersed ownership and companies for which the state or a widely held

[4] To avoid problems with outliers, we eliminate from the sample the upper and lower 0.5% of company-year observations for (i) the change in scaled annual earnings and (ii) the cumulative market-adjusted stock price return.

[5] We thank Simeon Djankov for sharing this database. A detailed description of the procedures used to construct the database is provided in Claessens et al. (2000, pp. 84-94). Since the Claessens et al. database is constructed using 1996 data, we are implicitly assuming that any of our test variables that are based on the Claessens et al. data remain constant during our test period.

company or financial institution is the largest block shareholder).

This classification procedure results in 174 RF-controlled company-year observations based on 46 companies and 739 non-RF-controlled company-year observations based on 190 companies. Despite the small size of the RF-controlled sample, the companies in this sample are expected to be economically important. For example, Claessens et al. (2000) report that in 1996, the five largest family groups in the Philippines (Indonesia; Thailand; Malaysia) control 42.8% (40.7%; 32.2%; 17.3%) of their respective countries' corporate sector in terms of market capitalization.

Panel A of Table 1 lists the distribution of the RF-controlled and the non-RF-controlled company-years by country and by fiscal year. We note that the number of observations grows steadily over time due to an increase in the number of companies covered by *Global Vantage* over the sample period.

Panel B of Table 1 provides descriptive data for the RF-controlled and the non-RF-controlled companies. Mean CRR18 (the cum-cash-dividend compounded monthly raw return over the 18 months ending six months after the fiscal year end) is 0.196 for the RF-controlled companies and 0.218 for the non-RF-controlled companies, with the difference in means insignificant at traditional levels. Moreover, mean ΔNI (the change in annual earnings before extraordinary items scaled by the beginning-of-the-year market value of equity) is 0.016 for the RF-controlled companies and 0.007 for the non-RF-controlled companies, with the difference in means significant at the 0.066 two-tailed level.

Our tests control for three factors that have been previously identified as impacting the association between a company's stock price return and its earnings, namely company size, growth, and risk. Referring to Panel B of Table 1, among the variables representing these

factors (defined in Table 1), the only significant difference between the RF-controlled and the non-RF controlled companies is that the RF-controlled companies are larger at better than the 0.10 two-tailed significance level. This result is not too surprising because the RF-controlled companies are those controlled by Southeast Asia's billionaire families.

3. Tests and results

Initial analysis

This section reports the results of our tests of the insider trading hypothesis. Stated in alternative form, the hypothesis is as follows:

> H1: For companies in Indonesia, Malaysia, the Philippines, and Thailand, relative to insiders of other companies, insiders of companies controlled by the richest families more aggressively trade on their proprietary knowledge concerning the value-relevant information contained in annual earnings before these earnings are reported to outsiders.

A direct test of the insider trading hypothesis H1 would involve an examination of data on insider trading activity. However, as discussed earlier, insider trading data are difficult to obtain for Southeast Asian markets and we would not expect such data to be accurate because (i) data on insider trading are generally compiled from reports filed by corporate insiders, who would not self-report any illegal insider trading activity and (ii) insiders of Southeast Asian companies often disguise their trades using conglomerate-owned brokerage businesses and nominee accounts.

Due to the difficulty of obtaining reliable insider trading data, we test the insider trading hypothesis H1 by estimating a model that captures the flow of the value-relevant information in annual earnings into stock price. We begin with a parsimonious model that allows us to demonstrate our primary results in a simple manner. Later, we augment the model with variables representing factors that have been previously identified as impacting

the association between a company's stock price return and its earnings. The model initially estimated is:

$$CMAR_{it} = \beta_0 + \beta_1 RFC_i + \beta_2 \Delta NI_{it} + \beta_3 \Delta NI_{it} * RFC_i + \beta_n FIXEFF + \varepsilon_{it} \quad (1)$$

where CMAR is the cumulative compounded monthly return over a given return interval, RFC is a dummy variable that equals one for the RF-controlled observations and zero otherwise, ΔNI is the change in annual earnings before extraordinary items scaled by the beginning-of-the-year market value of equity, and FIXEFF are dummy variables that account for annual and country-specific fixed effects.[6] CMAR is adjusted for stock splits and stock dividends and it is market adjusted by subtracting the return on an equally weighted market portfolio of all stocks in the appropriate country.

We estimate model (1) over the 18-month period ending six months after the fiscal year end. Similar to Penman (1985), the 12-month period preceding the fiscal year end is included in the analysis because we wish to capture aggregate insider trading over the entire period to which annual earnings relate. The six-month period after the fiscal year end is included in the analysis because this is the period during which our sample companies would report their annual earnings to the public.[7] When estimating model (1), we pool observations with earnings increases and decreases based on the evidence in Ball et al. (2000b, p. 24) that "[t]he lack of asymmetric earnings conservatism in the Asian countries is sufficient to justify a conventional linear return/earnings model."

[6] To conserve space, estimated coefficients on FIXEFF dummy variables are not reported in our tables.

[7] Annual reporting deadlines are as follows (with data source in parentheses): Indonesia, 120 days after the fiscal year end (Jakarta Stock Exchange, www.jsx.co.id); Malaysia, six months after the fiscal year end (Kuala Lumpur Stock Exchange, www.klse.com.my); the Philippines, 135 days after the fiscal year end (Philippine Securities and Exchange Commission, www.sec.gov.ph/Form17AAnnualReport.htm); Thailand, three months after the fiscal year end (The Stock Exchange of Thailand, www.set.or.th/index.htm).

If the insider trading hypothesis H1 is to be supported, we will observe a positive estimated coefficient on the interactive term ΔNI*RFC when model (1) is estimated over months 1-12, the 12-month period to which annual earnings relate, accompanied by a negative estimated coefficient on ΔNI*RFC when model (1) is estimated over months 13-18, the six-month period during which companies report their annual earnings. This result would suggest that relative to the non-RF-controlled companies, the stock price for the RF-controlled companies more fully anticipates the value-relevant information in annual earnings, which is consistent with insiders of the RF-controlled companies more aggressively trading on their proprietary knowledge concerning this information.

We note that the preceding insider trading interpretation of the return-earnings association is similar in spirit to Udpa (1996), who predicts a smaller short window earnings response coefficient for U.S. companies that experience greater insider trading activity prior to the announcement of their earnings. An advantage to our long window test design is that we are able to examine the flow of information into stock price both in the period during which the events reflected in annual earnings generally occur and in the period during which annual earnings are publicly disclosed, rather than only in the period during which annual earnings are publicly disclosed.

The results reported in the left hand results column of Table 2 show that the RF-controlled observations have a stronger return-earnings association than the non-RF-controlled observations when model (1) is estimated over months 1-12 and a weaker return-earnings association when model (1) is estimated over months 13-18. Specifically, the estimated coefficient on the interactive term ΔNI*RFC is positive at the 0.072 two-tailed significance level when model (1) is estimated over months 1-12, and it is negative

at the 0.067 two-tailed significance level when model (1) is estimated over months 13-18. These results are consistent with the insider trading hypothesis H1.

We note that the insider trading interpretation of our results does not imply that insider trading occurs only for the companies controlled by the richest families. Rather, this interpretation implies that the degree of insider trading for the companies controlled by the richest families is greater than that for the companies not so controlled. We now turn to further analyses of whether the insider trading interpretation of our results is reasonable.

Tests that use Hong Kong companies

La Porta et al. (1998) present measures that summarize the legal protection of a country's minority shareholders, as well as the quality of the enforcement of the rules that provide this protection, for 49 countries. Among Asian countries, Hong Kong receives the highest score (5.0 on a 6.0 scale) on La Porta et al.'s composite measure of the legal protection of a country's minority shareholders, while the mean score on this measure is 2.8 for Indonesia, Malaysia, the Philippines, and Thailand. Moreover, Hong Kong receives a perfect 10.0 score on La Porta et al.'s measure of the efficiency of the judicial system of a country, while the mean score on this measure is 4.9 for Indonesia, Malaysia, the Philippines, and Thailand. This evidence leads us to expect that relative to insiders of companies in Indonesia, Malaysia, the Philippines, and Thailand, insiders of Hong Kong companies have fewer opportunities to trade on their proprietary information. As a result, if particularly aggressive insider trading for Southeast Asian companies controlled by the richest families explains the pattern of information flow into stock price that we have observed, then we predict that this telltale pattern will be weak or nonexistent for Hong Kong companies.

To test this prediction, we use the sample selection procedures described in Section 2 to

identify 297 Hong Kong company-year observations. These observations are partitioned into 163 RF-controlled company-year observations based on 29 companies and 134 non-RF-controlled company-year observations based on 30 companies. Next, we estimate model (1) for these Hong Kong companies and compare the results with those for the Southeast Asian companies.

The results for the Hong Kong companies, reported in the right hand results column of Table 2, show that the return-earnings association for the RF-controlled observations is statistically indistinguishable from that for the non-RF-controlled observations when model (1) is estimated over either months 1-12 or months 13-18.[8,9] In contrast, as reported earlier, for the Southeast Asian companies the RF-controlled observations have a significantly stronger return-earnings association than the non-RF-controlled observations when model (1) is estimated over months 1-12 and a significantly weaker return-earnings association when model (1) is estimated over months 13-18. These results are consistent with the insider trading interpretation of our findings because the estimates for Southeast Asia are based on companies that are listed in countries in which insiders have relatively more opportunities to trade on their proprietary information.[10]

[8] Given the stronger regulatory environment in Hong Kong, we are surprised that relative to the Southeast Asian companies, the Hong Kong companies have a smaller estimated coefficient on ΔNI for months 1-12. A similar result is observed in Ball et al. (2000b).

[9] This result does not imply that insider trading does not occur in Hong Kong. In fact, based on the evidence in Kealey (2000) and Zhu, Chang, and Pinegar (2002), we expect that such trading does occur. However, our results do suggest that insider trading in Hong Kong is not skewed towards the companies controlled by the richest families, presumably because the insiders of these companies find it relatively difficult to be particularly aggressive in their insider trading activity.

[10] Mok, Lam, and Cheung (1992) find evidence suggesting that there is a spillover of information across Hong Kong companies controlled by the same family. It is possible that the pattern of information flow that we observe in Southeast Asia is due to information spillover across companies controlled by the same richest family. However, because stock markets and financial service industries are more developed in Hong Kong than in Southeast Asia, we expect that there is more information spillover across companies controlled by the same richest family in Hong Kong. Our test results provide evidence that directly counters this expectation.

Tests that control for size, growth, and risk

In this section, we augment model (1) with factors that have been identified in previous research as impacting the association between a company's stock price return and its earnings. The model estimated is:

$$\begin{aligned} CMAR_{it} = {} & \beta_0 + \beta_1 RFC_i + \beta_2 \Delta NI_{it} + \beta_3 \Delta NI_{it} * RFC_i + \beta_4 SIZE_i + \\ & \beta_5 \Delta NI_{it} * SIZE_i + \beta_6 GROWTH_{it} + \beta_7 \Delta NI_{it} * GROWTH_{it} + \\ & \beta_8 RISK_{it} + \beta_9 \Delta NI_{it} * RISK_{it} + \beta_n FIXEFF + \varepsilon_{it} \end{aligned} \quad (2a)$$

where CMAR, RFC, ΔNI, and FIXEFF are defined following model (1), and SIZE, GROWTH, and RISK are controls for company-specific size, growth, and risk that are defined next.

Evidence in Freeman (1987), Collins, Kothari, and Rayburn (1987), and elsewhere suggests that relative to smaller companies, the stock price for larger companies reflects the value-relevant information in earnings at an earlier time.[11] Since the RF-controlled observations in our sample are on average larger than the non-RF-controlled observations, it is important that we test whether company size, rather than particularly aggressive insider trading, explains the earlier flow of information into stock price for the RF-controlled observations. For this reason, model (2a) includes the variable ΔNI*SIZE. To control for differences among countries in the market capitalization of an average company, SIZE is a rank variable based on a company's within-country relative market value of equity. Size ranks are from the Claessens et al. (2000) database and they are used because they are comprehensive, measuring within-country company size for companies

[11] One possible explanation for this phenomenon is that institutional ownership, which would be associated with relatively large resources for acquiring and analyzing value-relevant information, increases with company size (Obrien and Bhushan 1990).

comprising 78% (89%; 74%; 82%; 64%) of the total market capitalization in Hong Kong (Indonesia; Malaysia; the Philippines; Thailand).[12] Based on the preceding discussion, we expect a positive coefficient on ΔNI*SIZE in estimates of model (2a).

Miller and Modigliani (1958; 1961; 1963; 1966) develop an equity valuation model in which a company's equity value is a positive function of its expected future earnings and its growth, and a negative function of the discount rate or the risk associated with these earnings. The variable ΔNI*GROWTH is included in model (2a) to control for the effect of growth on the association between a company's stock price return and its earnings, where GROWTH is the beginning-of-the-year market value of equity plus the book value of liabilities, divided by the book value of assets. We expect a positive coefficient on ΔNI*GROWTH in estimates of model (2a).

The variable ΔNI*RISK is included in model (2a) to control for the effect of risk on the association between a company's stock price return and its earnings, where RISK is the standard deviation of the annual raw stock price return over the current and four preceding years. Based on the evidence in, for example, Beaver, Kettler, and Scholes (1970) that higher RISK is associated with a higher discount rate for expected future earnings, we expect a negative coefficient on ΔNI*RISK in estimates of model (2a).

Table 3 reports the results of estimating model (2a). The most notable finding here is that the earlier results for the estimated coefficient on ΔNI*RFC are robust to the inclusion of controls for company-specific size, growth, and risk. More specifically, it is still the

[12] Claessens et al. (2000) assign the smallest company the largest SIZE rank. For ease of interpretation, we reverse this rank ordering. The inclusion of FIXEFF in model (2a) assures that relative size is controlled for within each country. Since the Claessens et al. database is constructed using 1996 data, we are assuming that size ranks remain constant during our test period. As a sensitivity test, we repeat our analysis with SIZE measured as the log of the year-end market value of equity, with qualitatively similar results.

case that for the Southeast Asian companies (but not for the Hong Kong companies), the RF-controlled observations have a significantly stronger return-earnings association than the non-RF-controlled observations over months 1-12 and a significantly weaker return-earnings association over months 13-18.

Regarding the estimated coefficients on the control variables, the estimated coefficients on ΔNI*SIZE and ΔNI*GROWTH are generally in the predicted direction. The statistical significance of the results for ΔNI*SIZE is stronger for the Hong Kong companies, while the statistical significance of the results for ΔNI*GROWTH is stronger for the Southeast Asian companies. The estimation results for ΔNI*RISK are less clear-cut, with the estimated coefficient on this variable in the predicted direction only for the Southeast Asian companies over months 1-12. Overall, the results for company-specific size, growth, and risk are generally at least weakly consistent with previous research findings, even though these previous findings are predominantly based on studies of U.S. companies that face a very different corporate governance, legal, political, economic, and regulatory environment than do our sample companies.

Tests that partition the sample on the change in earnings

We conduct an additional analysis of the insider trading interpretation of our findings by partitioning the sample based on the magnitude of the change in annual earnings. In this analysis, we make two assumptions. First, we assume that insiders trade more aggressively on their proprietary information when this information relates to particularly good or bad news. Second, we assume that a particularly large year-to-year increase or decrease in earnings reflects particularly good or bad news that insiders could trade on before earnings are reported to outsiders. Based on these assumptions, we predict that the return-earnings

association over months 1-12 and months 13-18 that we interpret as evidence of especially aggressive insider trading will be more pronounced for sample observations with the largest changes in their annual earnings.

To test this prediction, for the Southeast Asian companies we estimate model (2a) separately for the observations with an extreme earnings change and the observations with a nonextreme earnings change. Within the RF-controlled and the non-RF-controlled samples, extreme earnings change observations are those with the largest 25% increase or decrease in year-to-year earnings, and nonextreme earnings change observations are the remaining 50% of the sample.[13]

In these estimates (not tabled), when model (2a) is estimated over months 1-12 the coefficient on ΔNI*RFC is positive and significant at better than the 0.10 two-tailed level regardless of whether the extreme or the nonextreme earnings change observations are used to estimate model (2a). On the other hand, when model (2a) is estimated over months 13-18 the coefficient on ΔNI*RFC is negative and significant at better than the 0.05 two-tailed level when model (2a) is estimated using the extreme earnings change observations, while the coefficient on ΔNI*RFC is not significant at traditional levels when model (2a) is estimated using the nonextreme earnings change observations. Based on the reasonable assumption that insiders trade more aggressively on their proprietary knowledge about earnings when these earnings reflect particularly good or bad news, the results over months 13-18 offer additional support for the insider trading interpretation of our findings.

[13] The extreme earnings change sample size for RFC = 1 (RFC = 0) is 84 (373) company-years based on 38 (158) companies. The nonextreme earnings change sample size for RFC = 1 (RFC = 0) is 91 (360) company-years based on 35 (146) companies. The sample sizes of the extreme and the nonextreme earnings change samples differ slightly because within each sample, we eliminate the upper and lower 0.5% of company-year observations for (i) the change in scaled annual earnings and (ii) the cumulative market-adjusted stock price return.

Tests that partition the sample at the year of the initial prosecution of insider trading

We conduct an additional analysis of the insider trading interpretation of our findings by dividing the sample into two time periods: the years up to and including the year during which the first legal case in a country is brought against insider trading and the years following the year during which the first legal case in a country is brought against insider trading. We predict that the return-earnings association over months 1-12 that we interpret as evidence of insider trading will be less pronounced in the years following the year during which the first legal case against insider trading is prosecuted. To test this prediction, we estimate the following model over months 1-12:

$$\begin{aligned} CMAR_{it} = {} & \beta_0 + \beta_1 RFC_i + \beta_2 IT_{it} + \beta_3 \Delta NI_{it} + \beta_4 \Delta NI_{it} * IT_{it} + \beta_5 \Delta NI_{it} * RFC_i + \\ & \beta_6 \Delta NI_{it} * RFC_i * IT_{it} + \beta_7 SIZE_i + \beta_8 \Delta NI_{it} * SIZE_i + \\ & \beta_9 GROWTH_{it} + \beta_{10} \Delta NI_{it} * GROWTH_{it} + \beta_{11} RISK_{it} + \\ & \beta_{12} \Delta NI_{it} * RISK_{it} + \beta_n FIXEFF + \varepsilon_{it} \end{aligned} \quad (2b)$$

where CMAR, RFC, ΔNI, , SIZE, GROWTH, RISK, and FEXEFF are the variables included in model (2a), and IT is an insider trading dummy variable that changes from zero to one in the year following the year during which the first legal case is brought against insider trading.

Thailand, which prosecuted its first case against insider trading in 1993, is the only country in our Southeast Asian sample that brought a case against insider trading before 1996 (*AsiaWeek* 2000; Bhattacharya and Daouk 2002). Since our sample covers the years 1989 to 1996, we must restrict our analysis to the 230 Thailand company-year observations in our sample. Test results (not tabled) for the estimated coefficients on the variables included in both models (2a) and (2b) are consistent with the conclusions drawn previously. Of most interest, the estimated coefficients on the interactive terms ΔNI*IT

and ΔNI*RFC*IT are both negative, with the result for ΔNI*RFC*IT significant at better than the 0.10 one-tailed level. These results are consistent with the insider trading interpretation of our findings because they indicate that the return-earnings association over months 1-12 that we interpret as evidence of insider trading is less pronounced in the years following the year during which the first legal case is brought against insider trading.

Summary of the findings

The evidence in Section 3 indicates that for companies in Indonesia, Malaysia, the Philippines, and Thailand, the flow of the value-relevant information contained in annual earnings into stock price occurs earlier for the companies controlled by the richest families. This pattern of information flow is especially pronounced when there is a strong incentive, as proxied by a large change in earnings or by no insider trading cases having yet been prosecuted in a country, to trade on inside information. We do not find similar evidence in the relatively well regulated market of Hong Kong. These results are consistent with the contention that insiders of the richest-family-controlled companies in Southeast Asia are particularly aggressive in trading on their proprietary knowledge of the value-relevant information in earnings before these earnings are reported to the public.

4. Additional analyses

Tests that use alternative measures of the timing of information flows

As an additional test of the insider trading hypothesis H1, we use the Southeast Asian companies to estimate the following two measures, introduced in Alford et al. (1993), of the flow of the value-relevant information in annual earnings into stock price:

$$\%CMAR1_n = [(Ret1_{long,n} - Ret1_{short,n})/2] \,/\, [(Ret1_{long,18} - Ret1_{short,18})/2] \quad (3a)$$

$$\%CMAR2_n = [(Ret1_{long,n} - Ret1_{short,n})/2] \,/\, [(Ret2_{long,18} - Ret2_{short,18})/2] \quad (3b)$$

$Ret1_{long,n}$ ($Ret1_{short,n}$) is the compounded monthly return through month n (n = 1,…,18) on a

portfolio that holds equally weighted long (short) positions in companies with a year-to-year increase (decrease) in their annual earnings. $Ret2_{long,18}$ ($Ret2_{short,18}$) is the 18-month compounded monthly return on a portfolio that holds equally weighted long (short) positions in companies with an 18-month increase (decrease) in their stock price. In all calculations, the compounded monthly return is adjusted for stock splits and stock dividends and it is market adjusted by subtracting the return on an equally weighted market portfolio of all stocks in the appropriate country.

Intuitively, $\%CMAR1_n$ measures the return that an investor could earn through month n with foreknowledge of the sign of the change in sample companies' annual earnings for the upcoming year as a percentage of the 18-month return that he or she could earn with this foreknowledge. $\%CMAR2_n$ measures the return that an investor could earn through month n with foreknowledge of the sign of the change in sample companies' annual earnings for the upcoming year as a percentage of the 18-month return that he or she could earn with foreknowledge of the sign of these companies' stock price returns over months 1-18. An advantage to using %CMAR1 and %CMAR2 as measures of the flow of the information in earnings into stock price is that they do not require the assumption of a linear return-earnings association (Ali and Hwang 2000).

Consistent with the insider trading hypothesis H1, the behavior of %CMAR1 and %CMAR2 (not tabled) indicates that the stock price for the RF-controlled companies more fully anticipates the value-relevant information contained in annual earnings than does the stock price for the non-RF-controlled companies. For example, by the end of month 12, %CMAR1 is 90.5% for the RF-controlled observations versus 72.5% for the non-RF-controlled observations and %CMAR2 is 39.3% for the RF-controlled observations versus

22.3% for the non-RF-controlled observations.

To test the statistical significance of the preceding evidence, for each of months 1-12 we calculate DIFF1 as %CMAR1 through month n for the RF-controlled observations minus %CMAR1 through month n for the non-RF-controlled observations. We then test whether mean DIFF1 for months 1-12 is greater than zero. These procedures are also applied to the monthly %CMAR2 values to calculate and test DIFF2. Consistent with the insider trading hypothesis H1, in these tests mean DIFF1 and mean DIFF2 are both greater than zero at better than the 0.01 two-tailed significance level.

Does insider trading begin prior to the 18-month test window?

When testing the long window flow of information into stock price, it is difficult to specify the appropriate period over which to examine the stock price return. Previous research (e.g., Freeman 1987; Kothari and Sloan 1992) suggests that an 18-month period could be too short to provide the most powerful tests. In the context of this study, it is conceivable that insider trading, which we hypothesize is driving our results, begins prior to the 18-month return window used in our analysis. To test for this possibility, we estimate models (4a) and (4b) below and then test whether the estimated coefficient on ΔNI for model (4a) differs from the estimated coefficient on ΔNI for model (4b):

$$CMAR18_{it} = \beta_0 + \beta_1 \Delta NI_{it} + \varepsilon_{it} \quad (4a)$$

$$CMAR27_{it} = \beta_0 + \beta_1 \Delta NI_{it} + \varepsilon_{it} \quad (4b)$$

where CMAR18 (CMAR27) is the cumulative market-adjusted return over the 18- (27-) month period ending six months after the fiscal year end and ΔNI is the change in annual earnings before extraordinary items scaled by the beginning-of-the-year market value of equity. A 27-month window is chosen based on the evidence in Kothari and Sloan (1992)

that the return-earnings association for U.S. companies does not increase much when CMAR is increased beyond the 21-month period preceding the end of the fiscal year.

Models (4a) and (4b) are estimated for the RF-controlled observations, as well as for the non-RF-controlled observations, within each of the two groups reported in Table 2 (i.e., Southeast Asian companies and Hong Kong companies). In every estimate, the coefficients on ΔNI that are obtained from estimating models (4a) and (4b) do not differ from each other at traditional significance levels. Specifically, two-tailed significance levels for tests of whether the estimated coefficients differ are as follows: for RFC = 1 in Southeast Asia, 0.758; for RFC = 1 in Hong Kong, 0.884; for RFC = 0 in Southeast Asia, 0.999; for RFC = 0 in Hong Kong, 0.673. These results do not suggest that insider trading, which we hypothesize is driving our results, begins prior to the 18-month return window used in our analysis.

Tests of the effect of family control overall

In this section, we examine whether the telltale pattern of the flow of information into stock price that we observe for the richest-family-controlled companies in Southeast Asia is also observed if we define family control as control by any, as opposed to only a very rich, family. Our motivation here is to provide evidence as to whether particularly aggressive insider trading is associated only with richest family, as opposed to "any family", control. As discussed below, this evidence has implications for studies that attempt to document the economic consequences of the corporate governance structure in Southeast Asia.

In this analysis, we estimate model (2a) after replacing the variables RFC and ΔNI*RFC with the variables FAM and ΔNI*FAM, where FAM is a dummy variable that

equals one for observations for which a company's largest block shareholder is a family and zero otherwise. The information necessary to code FAM is obtained from the Claessens et al. (2000) ownership structure database.

Estimation results using FAM, reported in Table 4, do not indicate particularly aggressive insider trading for family-controlled companies overall. Specifically, for all sample partitions and test windows, the estimated coefficient on ΔNI*FAM is not significant at traditional levels.

Considered in conjunction with the results reported earlier, these results suggest that it is richest family control, rather than family control per se, that is associated with particularly aggressive insider trading in Southeast Asian markets. An important implication here is that in future studies that attempt to document the economic consequences of the corporate governance structure in Southeast Asia, an especially effective approach might be to separately examine the companies controlled by the richest families.

5. Summary

Based on tests using 1989 to 1996 data for companies in Indonesia, Malaysia, the Philippines, and Thailand, we find that relative to other companies, the flow of the value-relevant information contained in annual earnings into stock price occurs earlier for the companies controlled by the richest families. This pattern of information flow is especially pronounced when there is a strong incentive, as proxied by a large change in earnings or by no insider trading cases having yet been prosecuted in a country, to trade on inside information. These results are robust to controls for company-specific size, growth, and risk, as well as to alternative measures of the flow of information into stock price. We do

not find similar evidence in the relatively well regulated market of Hong Kong or for family-controlled companies overall.

Our results are consistent with the contention that insiders of Southeast Asian companies controlled by the richest families are particularly aggressive in trading on their proprietary knowledge concerning the information in annual earnings before these earnings are reported to outsiders. Overall, these findings expand our understanding of how corporate governance structure affects the flow of information into stock price and they suggest that a company's stock price is more informative for companies in which insiders have relatively more opportunities and incentives to trade on their proprietary information.

We acknowledge that our study has several limitations because we do not use data that directly measure insider trading. For example, our study says nothing about exactly when insiders trade on their private information or precisely how such activities are communicated to other investors. A factor contributing to these limitations is that we investigate our research questions in markets where regulation and disclosure on insider trading are lax and opaque. Since these markets are undergoing reform in insider trading regulation and disclosures, we leave an investigation of these issues to future research.

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TABLE 1

Sample characteristics

Panel A: Distribution of company-year observations by country and fiscal year

	RF-controlled									Non-RF-controlled								
Country	1989	1990	1991	1992	1993	1994	1995	1996	Total	1989	1990	1991	1992	1993	1994	1995	1996	Total
Indonesia	0	0	0	7	8	8	11	12	46	0	0	1	21	22	25	31	44	144
Malaysia	0	5	8	8	9	10	14	14	69	1	28	36	41	46	61	77	83	373
Philippines	0	0	0	2	2	2	3	8	17	0	2	2	4	4	5	6	11	34
Thailand	0	1	1	6	8	7	10	9	42	0	0	0	31	35	36	42	44	188
Total	0	6	9	24	27	27	38	43	174	1	30	39	97	107	127	156	182	739

Panel B: Descriptive statistics for RF-controlled and non-RF-controlled companies

	RF-controlled (N = 46)			Non-RF-controlled (N = 190)			Two-tailed *p*-value for
Variable	Mean	Median	Std. Dev	Mean	Median	Std. Dev	test of difference in means
CRR18	0.196	0.198	0.343	0.218	0.225	0.422	0.706
ΔNI	0.016	0.010	0.035	0.007	0.008	0.029	0.066
SIZE ($USD millions)	1162.780	551.952	1419.210	729.640	239.141	1954.610	0.090
GROWTH	1.931	1.717	0.906	2.052	1.659	1.624	0.496
RISK	0.151	0.149	0.040	0.156	0.148	0.053	0.483

Notes:

The RF-controlled observations include 174 company-year observations for 46 companies owned by the richest families in Southeast Asia (defined as Indonesia, Malaysia, the Philippines, and Thailand) from 1989 to 1996. We identify these families from *Forbes* (1994, 1998) surveys of world billionaires. We require that all company-year observations have available *Global Vantage Industrial/Commercial* and *Issue Files* data on annual earnings scaled by the beginning-of-the-year market value of equity, the change in scaled annual earnings, the stock price return, and financial statement variables required to calculate SIZE, GROWTH, and RISK, defined below. We also require that a company appear in the ownership structure database described in Claessens et al. (2000) and have non-missing data for the following company-specific items: whether or not a company's largest block shareholder is a family (with family name identified if the largest block shareholder is a family) and a company's within-country relative size rank based on market value of equity. We eliminate from the sample the upper and lower 0.5% of company-year observations of 1) the change in scaled annual earnings (ΔNI) and 2) the cumulative market-adjusted stock price return over our test windows. The non-RF-controlled observations include 739 company-year observations for 190 Southeast Asian companies not owned by the richest families in Southeast Asia from 1989 to 1996 that have all the required data described for the RF-controlled observations.

For the items reported in Panel B, company-year variable values for all the years that a company appears in the sample are first collapsed into company-specific mean variable values. Means, medians, and so forth of the resulting company-specific mean variable values are reported in Panel B. CRR18 is the cum-cash-dividend compounded monthly raw return over the 18 months ending six months after the fiscal year end, adjusted for stock splits and stock dividends. ΔNI is the change in annual earnings before extraordinary items scaled by the beginning-of-the-year market value of equity. SIZE is end-of-the-year market value of equity in $USD millions. GROWTH is the beginning-of-the-year market value of equity plus the book value of liabilities, divided by the book value of assets. RISK is the standard deviation of the annual raw stock price return over the current and four preceding years.

TABLE 2

Estimation results for regressions of cumulative market-adjusted return, CMAR, during the 18 months ending six months after the fiscal year end on the change in earnings, ΔNI, and on the richest family ownership dummy, RFC

	Indonesia, Malaysia, the Philippines, and Thailand (N=913)				**Hong Kong (N=297)**			
	Months 1 – 12		**Months 13 – 18**		**Months 1 – 12**		**Months 13 – 18**	
	Coeff.	*P-value*	**Coeff.**	*P-value*	**Coeff.**	*P-value*	**Coeff.**	*P-value*
Intercept	-0.695	*(0.095)*	-0.229	*(0.394)*	-0.142	*(0.157)*	0.072	*(0.300)*
RFC_i	0.007	*(0.848)*	-0.013	*(0.598)*	0.004	*(0.901)*	-0.039	*(0.109)*
ΔNI_{it}	2.810	*(<0.001)*	0.867	*(<0.001)*	1.122	*(0.003)*	0.919	*(0.001)*
ΔNI_{it}*RFCi	1.831	*(0.072)*	-1.207	*(0.067)*	0.804	*(0.164)*	0.204	*(0.613)*
Adj. R^2	0.086		0.012		0.082		0.078	

Notes:

The model estimated is $CMAR_{it} = \beta_0 + \beta_1 RFC_i + \beta_2 \Delta NI_{it} + \beta_3 \Delta NI_{it}*RFC_i + \beta_n FIXEFF + \varepsilon_{it}$

See the notes to Table 1 for a description of the RF-controlled and the non-RF-controlled observations. For Indonesia, Malaysia, the Philippines, and Thailand, sample size for RFC = 1 (RFC = 0) is 174 company-years based on 46 companies (739 company-years based on 190 companies). For Hong Kong, sample size for RFC = 1 (RFC = 0) is 163 company-years based on 29 companies (134 company-years based on 30 companies).

CMAR is the cumulative market-adjusted return, equal to the cum-cash-dividend compounded monthly return, adjusted for stock splits and stock dividends, minus the return on an equally weighted market portfolio of all stocks in the appropriate country. ΔNI is the change in annual earnings equal to annual earnings before extraordinary items in year t minus annual earnings before extraordinary items in year t-1 scaled by the beginning-of-the-year market value of equity. RFC is a dummy variable coded as 1 for the RF-controlled observations and as 0 otherwise. FIXEFF are dummy variables that account for annual and country-specific fixed effects. Estimated coefficients on FIXEFF are not reported. Two-tailed p-values for estimated coefficients are reported in parentheses.

Months 1-12 are the twelve months ending at the fiscal year end. Months 13-18 are the six months following the fiscal year end.

TABLE 3

Estimation results for regressions of cumulative market-adjusted return, CMAR, during the 18 months ending six months after the fiscal year end on the changes in earnings, ΔNI, on the richest family ownership dummy, RFC, and on variables that control for company-specific size, growth, and risk, SIZE, GROWTH, and RISK

	Indonesia, Malaysia, the Philippines, and Thailand (N=913)				**Hong Kong (N=297)**			
	Months 1 – 12		**Months 13 – 18**		**Months 1 – 12**		**Months 13 – 18**	
	Coeff.	*P-value*	**Coeff.**	*P-value*	**Coeff.**	*P-value*	**Coeff.**	*P-value*
Intercept	-0.764	*(0.066)*	-0.217	*(0.423)*	-0.096	*(0.412)*	-0.062	*(0.468)*
RFC_i	0.016	*(0.655)*	-0.012	*(0.625)*	-0.019	*(0.585)*	-0.031	*(0.214)*
ΔNI_{it}	3.330	*(0.006)*	-0.199	*(0.799)*	-3.476	*(0.027)*	0.009	*(0.993)*
ΔNI_{it}*RFCi	2.893	*(0.011)*	-1.395	*(0.037)*	0.637	*(0.305)*	0.102	*(0.822)*
SIZEi	0.000	*(0.054)*	0.000	*(0.968)*	0.001	*(<0.001)*	0.000	*(0.279)*
ΔNI_{it}*SIZEi	0.007	*(0.278)*	-0.002	*(0.686)*	0.010	*(0.006)*	0.003	*(0.331)*
GROWTHi	-0.015	*(0.071)*	-0.012	*(0.036)*	-0.015	*(0.263)*	0.011	*(0.277)*
ΔNI_{it}*GROWTHi	1.173	*(0.007)*	0.715	*(0.011)*	0.603	*(0.174)*	-0.182	*(0.574)*
RISKi	1.088	*(<0.001)*	-0.017	*(0.927)*	0.885	*(0.113)*	1.186	*(0.004)*
ΔNI_{it}*RISKi	-7.748	*(0.202)*	0.385	*(0.923)*	40.169	*(<0.001)*	12.164	*(0.126)*
Adj. R^2	0.108		0.014		0.185		0.104	

Notes:

The model estimated is $CMAR_{it} = \beta_0 + \beta_1 RFC_i + \beta_2 \Delta NI_{it} + \beta_3 \Delta NI_{it}*RFC_i + \beta_4 SIZE_i + \beta_5 \Delta NI_{it}*SIZE_i + \beta_6 GROWTH_{it} + \beta_7 \Delta NI_{it}*GROWTH_{it} + \beta_8 RISK_{it} + \beta_9 \Delta NI_{it}*RISK_{it} + \beta_n FIXEFF + \varepsilon_{it}$

See notes to Table 1 for a description of the RF-controlled and the non-RF-controlled observations. For Indonesia, Malaysia, the Philippines, and Thailand, sample size for RFC = 1 (RFC = 0) is 174 company-years based on 46 companies (739 company-years based on 190 companies). For Hong Kong, sample size for RFC = 1 (RFC = 0) is 163 company-years based on 29 companies (134 company-years based on 30 companies).

CMAR is the cumulative market-adjusted return, equal to the cum-cash-dividend compounded monthly return, adjusted for stock splits and stock dividends, minus the return on an equally weighted market portfolio of all stocks in the appropriate country. ΔNI is the change in annual earnings equal to annual earnings before extraordinary items in year t minus annual earnings before extraordinary items in year t-1 scaled by the beginning-of-the-year market value of equity. RFC is a dummy variable coded as 1 for the RF-controlled observations and as 0 otherwise. SIZE is a rank variable based on a company's 1996 year end within-country relative market value of equity among all companies included in Claessens et al.'s (2000) ownership structure database, with the largest company in a country assigned the largest SIZE rank value. GROWTH is the beginning-of-the-year market value of equity plus the book value of liabilities, divided by the book value of assets. RISK is the standard deviation of the annual raw stock price return over the current and four preceding years. FIXEFF are dummy variables that account for annual and country-specific fixed effects. Estimated coefficients on FIXEFF are not reported. Two-tailed p-values for estimated coefficients are reported in parentheses.

Months 1-12 are the twelve months ending at the fiscal year end. Months 13-18 are the six months following the fiscal year end.

TABLE 4

Estimation results for regressions of cumulative market-adjusted return, CMAR, during the 18 months ending six months after the fiscal year end on the changes in earnings, ΔNI, on the family ownership dummy, FAM, and on variables that control for company-specific size, growth, and risk, SIZE, GROWTH, and RISK

	Indonesia, Malaysia, the Philippines, and Thailand (N=913)				**Hong Kong (N=297)**			
	Months 1 – 12		**Months 13 – 18**		**Months 1 – 12**		**Months 13 – 18**	
	Coeff.	*P-value*	**Coeff.**	*P-value*	**Coeff.**	*P-value*	**Coeff.**	*P-value*
Intercept	-0.756	*(0.070)*	-0.209	*(0.443)*	-0.177	*(0.123)*	-0.111	*(0.189)*
FAM_i	-0.012	*(0.727)*	-0.013	*(0.338)*	0.077	*(0.041)*	0.022	*(0.421)*
ΔNI_{it}	3.482	*(0.007)*	-0.073	*(0.932)*	-3.363	*(0.030)*	0.124	*(0.913)*
ΔNI_{it}*FAMi	-0.238	*(0.766)*	-0.257	*(0.624)*	0.367	*(0.638)*	-0.301	*(0.599)*
SIZEi	0.000	*(0.805)*	0.000	*(0.864)*	0.001	*(<.0001)*	0.000	*(0.275)*
ΔNI_{it}*SIZEi	0.006	*(0.312)*	-0.001	*(0.711)*	0.008	*(0.014)*	0.002	*(0.535)*
GROWTHi	-0.015	*(0.069)*	-0.011	*(0.039)*	-0.008	*(0.520)*	0.014	*(0.141)*
ΔNI_{it}*GROWTHi	1.216	*(0.005)*	0.651	*(0.022)*	0.472	*(0.309)*	-0.130	*(0.704)*
RISKi	1.094	*(<0.001)*	-0.009	*(0.963)*	0.899	*(0.104)*	1.221	*(0.003)*
ΔNI_{it}*RISKi	-6.766	*(0.273)*	0.373	*(0.926)*	38.587	*(0.000)*	12.083	*(0.132)*
Adj. R^2	0.104		0.008		0.196		0.102	

Notes:

The model estimated is $CMAR_{it} = \beta_0 + \beta_1 FAM_i + \beta_2 \Delta NI_{it} + \beta_3 \Delta NI_{it}*FAM_i + \beta_4 SIZE_i + \beta_5 \Delta NI_{it}*SIZE_i + \beta_6 GROWTH_{it} + \beta_7 \Delta NI_{it}*GROWTH_{it} + \beta_8 RISK_{it} + \beta_9 \Delta NI_{it}*RISK_{it} + \beta_n FIXEFF + \varepsilon_{it}$

For Indonesia, Malaysia, the Philippines, and Thailand, sample size for FAM = 1 (FAM = 0) is 689 company-years based on 176 companies (224 company-years based on 60 companies). For Hong Kong, sample size for FAM = 1 (FAM = 0) is 217 company-years based on 42 companies (80 company-years based on 17 companies).

CMAR is the cumulative market-adjusted return, equal to the cum-cash-dividend compounded monthly return, adjusted for stock splits and stock dividends, minus the return on an equally weighted market portfolio of all stocks in the appropriate country. ΔNI is the change in annual earnings equal to annual earnings before extraordinary items in year t minus annual earnings before extraordinary items in year t-1 scaled by the beginning-of-the-year market value of equity. FAM is a dummy variable coded as 1 if a company's largest block shareholder is a family and as 0 otherwise, as reported in Claessens et al.'s (2000) ownership structure database. SIZE is a rank variable based on a company's 1996 year end within-country relative market value of equity among all companies included in Claessens et al.'s ownership structure database, with the largest company in a country assigned the largest SIZE rank value. GROWTH is the beginning-of-the-year market value of equity plus the book value of liabilities, divided by the book value of assets. RISK is the standard deviation of the annual raw stock price return over the current and four preceding years. FIXEFF are dummy variables that account for annual and country-specific fixed effects. Estimated coefficients on FIXEFF are not reported. Two-tailed p-values for estimated coefficients are reported in parentheses.

Months 1-12 are the twelve months ending at the fiscal year end. Months 13-18 are the six months following the fiscal year end.