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Does Corporate Governance Improve Transparency in Emerging Markets?

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Abstract

We seek to understand how corporate governance affects transparency in emerging markets, where information asymmetry is endemically high. Using Thailand as a case study, we find that firms with better quality corporate governance have more firm-specific information incorporated in stock prices. We also highlight the role of corporate insider trading in further reducing information asymmetry in Thailand. The results are robust to alternative proxies for information disclosure.

Keywords: Corporate Governance, Transparency, Emerging Markets, Thailand.
JEL Codes: G30; G32.

1 Introduction

Many empirical studies highlight a lack of information disclosure as the root cause of the 1997 South East Asian financial crisis (Johnson *et al.*, 2000; Rahman, 1998; Tsui and Gul, 2000). Recognizing that information quality can be improved via country and firm-level governance, most regulators have redrawn their guidelines to incorporate good governance principles into the fabric of corporate life. However, despite having a constant presence in developed countries, an understanding of how corporate governance affects emerging market firms is limited.

In this paper, we consider the impact of corporate governance on stock price transparency and idiosyncratic volatility in Thailand. Thailand has many similarities to developed Western markets, as the country has an established regulatory framework (based on the best examples of other country regulation) and a vibrant financial market. It is, however, a developing country and suffers from weak investor protection, corruption, excess

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volatility and other inefficiencies (Islam *et al*., 2009; Khanthavit *et al*., 2012; Klapper and Love, 2002).

Based on the Stock Exchange of Thailand and World Federation Exchange statistics over the last four years, the Thai stock market has about 557 listed firms with yearly total turnover approximately 1,532,352 million shares or 8,342,798 million Baht. Its market dividend yield and P/E ratio are about 3.22% and 15.07, respectively. Total market capitalization is 10,017,648 Baht or 322,586 million USD. The total investment flows are about 582 million USD to IPOs and about 3,584 million USD to already listed companies. There are about 53,880,000 trades via electronic order book of which number of trades in investments is only 3,640. The 5% most capitalized domestic companies' shares present about 68% of total market capitalization or 64% in total trading value.

Our empirical methodology adopts idiosyncratic volatility as a proxy for information quality (Morck *et al*., 2000; Jin and Myers, 2006). In general, the asset pricing literature treats systematic risk as the sole determinant of expected returns because it assumes firm-specific fluctuation can be cancelled in a well-diversified portfolio. In other words, firm-specific fluctuation is not focused by investors. However, there exists empirical evidence (Barber and Odean, 2000; Benartzi and Thaler, 2001; Campbell *et al*., 2001) that investors do not hold diversified portfolios, which means that firm-specific risk (i.e. idiosyncratic risk) is an important factor affecting expected returns. For example, Nartea *et al*. (2011) report a positive relation between idiosyncratic volatility and 1-month-ahead stock returns in ASEAN markets, including Thailand. McLean (2010) argues that idiosyncratic risk has a role in preventing arbitrage. Morck *et al*. (2000) use R^2 from an adapted market model regression to show that corporate governance and information quality are synonymous in countries throughout the world. Jin and Myers (2006) provide supportive evidence of the positive relationship between R^2 and several measures of opaqueness in stock markets. Further, Morck *et al*. (2013) explains that firm-specific return intensity correlates with economic dynamism over time and across market.

A firm-level analysis of the relation between idiosyncratic risk and corporate governance in Thailand has important implications for corporate disclosure practices in the South East Asian region. Although investor protection is generally poor (La Porta *et al*., 1999), an understanding of corporate governance and its effects can allow owners to identify specific structures to enhance information quality relating to their firm.

The possibility of less informative prices also offers opportunities for informed traders to earn abnormal profits. The family control structure of many Thai firms allows owners to exercise control over management, potentially leading to expropriation from minority shareholders. Clearly, this increases the risk to outside investors, which could be mitigated by good corporate governance. Finally, given the lack of publicly available firm-specific news in emerging markets, there will be greater demand for analysts to take on the role of information brokers. Lang *et al*. (2004) provide evidence that additional analyst coverage enhances firm value, especially in countries with low shareholder protection.

Our principal empirical question, which is explored in the Thai context, is whether corporate governance impacts upon the quality of firm-specific information in emerging markets. Following Morck *et al*. (2000) and Jin and Myers (2006), we use R^2 to proxy for firm-specific information disclosure and then associate R^2 with ownership concentration

and insider trading performance which is a direct measure of information asymmetry. The closest paper in this area is Jaggi and Tsui (2007). They measure firm-specific information in terms of earnings management and examine the impact of corporate governance on the association between earnings management and insider trading based on the assumption that insider trading is informative about earnings quality. This study extends Jaggi and Tsui (2007)'s idea on firm-specific information in the market perspective (R^2), instead of accounting point of view (accruals). Further, alternative measures of firm-specific information disclosure, i.e. analyst forecast precision based on publicly disclosed information, are investigated to provide robustness to our results.

Using 3,981 firm-years from 519 firms listed on the Stock Exchange of Thailand in the period 2002-2009, we find that high director ownership, and an institutional majority shareholder or family on the board of directors is associated with higher firm-specific information as captured in stock prices. Greater levels of firm-specific information are evident in closely-held firms (families or institutions) and in firms with more insider trading. Interestingly, we do not find any effect of having independent directors or splitting the role of Chairman and Chief Executive on firm-specific volatility.

Our study contributes to three streams of literature. The first relates to corporate governance, where we provide evidence regarding its effect on idiosyncratic risk in emerging markets. The research also has implications for the insider trading literature by documenting its relationship with firm-specific risk. Although it is recognized that insiders can outperform the market in their trading activity, the impact of insider trading on firm-specific risk has not been investigated. The last stream of literature concerns disclosure quality and the ability of corporate disclosures in emerging markets to affect a firm's underlying risk.

The rest of the paper is organized as follows. The next section reviews prior literature and develops the relevant hypotheses. Section 3 describes our sample and research design. Section 4 discusses the empirical results, and Section 5 concludes.

2 Prior Literature and Hypotheses

The demand for corporate disclosure arises from information asymmetry and the agency relationship between managers and outside investors. Shareholders employ corporate disclosure, corporate governance and management incentives as disciplining mechanisms, and trade off any reduction in information asymmetry against litigation costs, proprietary costs, and incentive costs (Coles *et al*., 1995; Botosan, 1997; Healy *et al*., 1999; Botosan and Plumlee, 2000; and Brown *et al*., 2004).

Corporate governance encourages managers to pursue an optimal disclosure policy (Healy and Palepu, 2011; Shleifer and Vishny, 1997). Two important vehicles that reduce agency conflicts between managers and outside investors are financing contracts and the board of directors. Financing contracts, such as debt covenants, require firms to disclose relevant information to lenders, whereas the board of directors monitors management on behalf of outside investors. Disclosure also depends on the dominant owner, with evidence suggesting more disclosure in firms with outside blockholders and less disclosure in family firms (Ajinkya *et al*., 2005; Karamanou and Vafeas, 2005; and Ali *et al*., 2007).

Agency theory presents a theoretical framework linking the disclosure decision to corporate governance practice. Akhigbe *et al*. (2008) find significant increases in total return variance, market risk and idiosyncratic risk before and after the introduction of SOX. There also exists evidence that corporate governance leads to higher disclosure quality and better transparency in less developed markets. For example, Cheung *et al*. (2006) report the importance of corporate governance, i.e. board size and board composition, on corporate disclosure in Thailand.

To measure the quality of firm-specific information, many studies follow Morck *et al*. (2000) by using R^2 from a market model at either the country or firm level (Wurgler, 2000; Durnev *et al*., 2003, 2004; Piotroski and Roulstone, 2004; Jin and Myers, 2006; Bakke and Whited, 2010; and Jiang *et al*., 2009). R^2 is related to systematic and firm-specific information. A low R^2 indicates more firm-specific information and a better information environment. Morck *et al*. (2000) document that lower R^2 (i.e. higher firm specific return variations) is associated with stronger public investor rights. Jin and Myers (2006) supports this evidence and explain that the ratio of market risk to total risk is higher in a higher opaqueness firm as R^2 is negatively related with public investor rights. Insider trading can be used to evaluate the likelihood of accrual quality. Jaggi and Tsui (2006) find that independent directors moderate the relationship between insider trading and earnings management.

The other alternative measure of information quality is financial analyst following. Greater analyst following, coupled with narrower forecast dispersion and lower volatility in forecast revisions is reflective of better information quality (Lang and Lundholm, 1993; Healy *et al*., 1999; Francis *et al*., 1998).

Recently, Alves *et al*. (2010) casts doubt on the appropriateness of R^2 as an indicator of corporate information quality and Ashbaugh-Skaife *et al*. (2006) note that the relationship between R^2 and information quality is not consistent across countries. Likewise, Kelly (2007) documents that firm-specific characteristics (e.g. firm size, age, institutional ownership, analyst coverage and liquidity) are not a powerful predictor for R^2. On one hand, R^2 is a measure of firm-specific return variation. On the other hand, R^2 is a proxy of information efficiency that reflects the level of corporate governance in such a firm or market. Lower R^2 can imply more firm-specific information is incorporated into stock prices. Many studies suggest that the incorporation of firm-specific information into stock prices is higher in a stock market where corporate governance is better (Morck *et al*., 2000, Alves *et al*., 2010; Jin and Myers, 2006; Dasgupta *et al*., 2010).

More recent studies investigate stock price synchronicity. The central finding is that prices incorporate more firm-specific information in an environment with stronger property rights and better corporate governance (see Alves *et al*., 2010; Dasgupta *et al*., 2009; Jin and Myers, 2006; Morck *et al*., 2000; Teoh *et al*., 2008; Shen, 2008; Pantzalis and Xu, 2008). Assuming that better corporate governance leads to higher dividend payment for minority shareholders, Kang and Kim (2013) find a negative relationship between R^2 and dividend payout and this relationship is stronger in business group firms. Nevertheless, Xing and Anderson (2011) point that both public and private information is incorporated into stock price, so stock price synchronicity can be low in either good or bad firm-specific information environment.

2.1 Hypothesis Development

Our paper extends the Jin and Myers (2006) market model R^2 analysis by investigating how it is related to corporate governance quality. We examine corporate governance provisions and ask whether they influence R^2 and the incorporation of information into stock prices. A low R^2 implies that firm-specific information is efficiently incorporated into stock prices, and signals more informative stock prices.

Since the board of directors' fiduciary responsibility is to participate in major firm decisions and monitor management, their characteristics can potentially affect the quality and flow of information to investors. We hypothesize that more accountable boards lead to better firm-specific information disclosure. Board accountability is affected by director ownership, board size, the fraction of independent directors, the fraction of female directors, and family investor involvement.

The literature is not clear on the relationship between director ownership and the informativeness of stock prices. Warfield *et al*. (1995), Yeo *et al*. (2002) and Petra (2007) report a positive relationship, Vafeas (2000) finds no meaningful relationship and Gabrielsen *et al*. (2002) present evidence of a negative relationship. Jensen and Meckling (1976) predict that concentrated director ownership will rectify the agency problem between managers and shareholders. This should lead to more effective corporate disclosure and better information quality, with more firm-specific information incorporated into stock prices.

H1: Firms with higher managerial ownership are associated with lower R^2 coefficients.

The impact of board size on information quality is still unclear. Whereas Vafeas (2000) shows that firms with the smallest boards have more informative earnings, Dimitropoulos and Asteriou (2010) find no meaningful effect of board size on information quality.

H2: Firms with larger boards are associated with lower R^2 coefficients.

The OECD Principles of Good Governance (2004) recommend splitting the CEO and chairman roles to avoid excessively strong control by any single individual on the board. Gul and Leung (2004) find that when the CEO and chairman roles are combined, voluntary disclosures are less frequent. Given the link between disclosure and information quality, we predict that splitting the two roles will lead to better information quality.

H3: Firms that split the CEO and chairman role are associated with lower R^2 coefficients.

Vafeas (2000) provides evidence that information quality is positively associated with the fraction of outside directors serving on a board. However, Persons (2008) argues that most Thai boards are neither independent nor accountable to minority shareholders because they are generally appointed by family owners. Also, Duchin *et al*. (2010) claim there is no guarantee that outside directors will improve information quality since information costs can affect outside director effectiveness.

H4: Firms with independent boards have lower R^2 coefficients.

Gender diversity in boards is another important governance characteristic. Adams and Ferreira (2004) find that firms with more variable stock returns have fewer women on their boards of directors. Also, Gul *et al*. (2011) report that gender diverse boards have better information quality through more frequent voluntary disclosures in large firms and stronger incentives for private information collection in small firms.

H5: Firms with gender diverse boards have lower R^2 coefficients.

The longer investment horizon of families means potential costs outweigh the benefits of corporate disclosure (McNichols and Trueman, 1994; Chen *et al.*, 2008). Bushman *et al.* (2004) also argue that direct monitoring by families alleviates agency conflicts between managers and shareholders, resulting in a lower demand for public corporate disclosure.

H6: Family Firms are associated with higher R^2 coefficients.

Healy and Palepu (2001) note that institutional investors facilitate credible disclosure between managers and investors and hence mitigate information and incentive problems. Similarly, Ferreira and Laux (2007) find that the relationship between governance and idiosyncratic risk is stronger for stocks that are intensely traded by institutional investors. Therefore, we can expect the following hypothesis.

H7: Firms with institutional investors are associated with lower R^2 coefficients.

3 Sample and Research Design

Our sample consists of 3,981 firm-years for all firms in the Thai SET index covering the period 2002-2009. We collect financial accounting information from Datastream, earnings forecasts from I/B/E/S, and corporate governance information from the Thai Stock Exchange. To control for potential errors from volatile stocks, we remove the smallest 5% of firms by market capitalization (Ang *et al.*, 2009).

3.1 Research Design

The Principles of good corporate governance were introduced to implement in Thai listed firms in 2002 and revised in 2006 based on the OECD principles and the World Bank's recommendation. The descriptive statistics of corporate governance practice and firm characteristics will be reported for the full sample (2002-2009) as well as before and after the implementation of the Principles.

Follow Morck *et al.* (2000), we then run the following regression to get R^2 and idiosyncratic volatility by year for each firm. In order to mitigate the possible beginning and end of the week effects, we use weekly rates of return from Wednesday to Wednesday. Also, we include a dummy variable, DCRISIS, to recognize the disruptive effect of the financial crisis period on asset returns.

$$\begin{aligned} r_{it} = \alpha_i &+ \beta_{1,i} r_{m,t} + \beta_{2,i}[r_{US,t} + EX_t] + \beta_{3,i} r_{m,t-1} + \beta_{4,i}[r_{US,t-1} + EX_{t-1}] + \beta_{5,i} r_{m,t-2} + \\ &+ \beta_{6,i}[r_{US,t-2} + EX_{t-2}] + \beta_{7,i} r_{m,t+1} + \beta_{8,i}[r_{US,t+1} + EX_{t+1}] + \\ &+ \beta_{9,i} r_{m,t+2} + \beta_{10,i}[r_{US,t+2} + EX_{t+2}] \end{aligned} \tag{1}$$

Where r_{it} is the return on stock i in week t, $r_{m,t}$ is the local market index return in week t, $r_{US,t}$ is the US market index return (a proxy for the global market), and EX_t is

the change in the Thai baht-US dollar exchange rate. The inclusion of two lead and lag terms is to correct for non-synchronous trading (Dimson, 1979; Jin and Myer, 2006)[1].

The non-statistic characteristics of α_i and the orthogonality of error terms from its explanatory variables can decompose the variance of returns into market-wide variation and firm-specific variation. Therefore, the R^2 of [1] measures both the goodness of fit test for the market model and the fraction of stock return variation related to market-wide fluctuations. Morck *et al.* (2013) highlight that the lower R^2 can imply that firm-specific variation is diversifiable. In other words, greater firm-specific return event intensity corresponds to higher firm-specific variations. Consequently, such stocks tend to move asynchronously from the market.

$$(2)\quad R_i^2 \equiv \frac{\text{Explained Variation}}{\text{Explained Variation} + \text{Residual Variation}} = \frac{\text{Market-Wide Variation}}{\text{Firm-Specific Variation} + \text{Market-Wide Variation}}$$

In the second stage, we regress R^2 on corporate governance variables to empirically test our hypotheses.

$$(3)\quad R_i^2 = f(ControlVariables_i, DIOWN_i, BSIZE_i, SPLIT_i, INDE_i, FEMALE_i, FAM_i, INSTI_i)$$

where R_i^2 is the proportion of stock return that is explained by market risk from equation [1]. Control variables include firm size (the natural log of market value), firm leverage (debt to total assets) and a dummy variable equal to 1 (zero otherwise) if the firm is in the financial sector. *DIOWN* is director ownership (%), *BSIZE* is the natural log of number of directors, *SPLIT* is a dummy variable equal to 1 (zero otherwise) if the CEO and chairman roles are split, *INDE* is the fraction of independent directors on board, *FEMALE* is the fraction of female directors on board, *FAM* is a dummy variable equal to 1 (zero otherwise) if the firm is run by a family, and *INSTI* is a dummy variable equal to 1 (zero otherwise) if an institution is the majority shareholder.

As a further test, we investigate whether ownership concentration and the presence of insider trading in the firm is associated with R^2. High ownership concentration is common in emerging markets and increases the agency problem between majority and minority shareholders. Insider trading can be treated as a signal of the directors' view on the future prospects of the firm and their trading performance is a direct measure of information asymmetry. Insider trading abnormal returns are calculated as follows:

$$(4)\quad AR_{it} = R_{it} - \begin{pmatrix} \alpha_i + \beta_{1,i} r_{m,t} + \beta_{2,i}[r_{US,t} + EX_t] + \beta_{3,i} r_{m,t-1} + \beta_{4,i}[r_{US,t-1} + EX_{t-1}] + \\ + \beta_{5,i} r_{m,t-2} + \beta_{6,i}[r_{US,t-2} + EX_{t-2}] + \beta_{7,i} r_{m,t+1} + \beta_{8,i}[r_{US,t+1} + EX_{t+1}] \\ + \beta_{9,i} r_{m,t+2} + \beta_{10,i}[r_{US,t+2} + EX_{t+2}] \end{pmatrix}$$

[1] We also tried the model without lagged terms and the results of r-square show similar pattern.

where AR_{it} represents risk and size adjusted abnormal returns, R_{it} is the return on firm i at time t, R_{mt} is the corresponding return on the market index at time t. The estimation period is approximately three months (120 days to 61 days) prior to the insider transaction, whereas the event period spans the 120-day period beginning 60 days before to 60 days after the trade.

We also examine the quality of earnings disclosures through an investigation of analyst forecast errors and dispersion. Two approaches are adopted. One, we create a dummy variable equal to 1 (zero otherwise) when firms' earnings forecast error and dispersion are in the bottom three deciles for that year. Two, we employ Barron *et al.* (1998)'s model of common information precision.

$$\text{Common information precision} = \frac{SE - D/N}{[(1 - 1/N)D + SE]^2} \tag{5}$$

Where SE is the squared error in the mean analyst forecast, D is forecast dispersion, and N is the number of analysts forecasting.

4 Empirical Results

Panel A of Table 1 presents summary statistics on our sample firms over the full period and split according to pre- and post-Thai governance reforms (2002-2005 and 2006-2009). The average firm size (market value) is $276.13 million and the average market to book ratio is 1.28. Although both market value and market to book increased after the reforms, firm performance fell because of the fallout from the global financial crisis. Operating cash flow increased over the period with mean operating cash flow per assets growing from 6.04% to 7.62%. Leverage stayed constant with an average debt to total assets of approximately 0.27.

Panel B of Table 1 presents descriptive statistics of the corporate governance characteristics of Thai firms. The average board size is close to 11 directors, of which 16% are female. Mean managerial ownership is approximately 17%, which is high in comparison to the US but comparable to other countries in the South East Asian region (Ghazali, 2009; Ho *et al*, 2004; Mak and Nuskadi, 2005). The Thai governance reforms had an impact on the proportion of independent directors on boards with an increase from 32.10% in 2002-2005 to 42.29% in 2006-2009. The percentage of firms where the CEO/Chairman role was split also increased from 71% to 77%. Consistent with Connelly *et al.* (2012), families and institutions became more involved in Thai businesses with a significant growth in firms with controlling family stockholders (13% to 44%), and firms with institutional controlling stockholders (15% to 23%).

In Table 2, we present equally weighted average R^2 for the full sample and sub-samples by year and industry. The average R^2 coefficient is .3204 over the full sample period. However, there is considerable variation across years with R^2 ranging between 0.2631 for 2003 to 0.4451 for 2008, the depth of the financial crisis. Prior research (see, for example, Sandoval Junior and De Paulo Franca, 2012) has shown that markets move simultaneously during financial crises and this will have an undoubted impact on our

Table 1: Summary statistics

	2002-2009		2002-2005		2006-2009		Two sample test	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Panel A: firm characteristics								
Market value (mil.)	276.13	41.35	223.14	37.76	347.84	44.91	−2.30*	−2.81*
Operating cash flow per sales (%)	6.65	7.07	6.04	6.71	7.62	7.61	−3.87*	−3.47*
Debt to total assets (time)	0.27	0.23	0.29	0.24	0.25	0.22	4.90*	3.88*
Return on asset (%)	7.44	7.42	8.87	8.08	5.22	6.37	2.63*	6.22*
Return on equity (%)	7.08	10.2	15.41	11.32	−5.99	8.08	3.18*	9.54*
Market to book value (time)	1.28	0.97	1.15	0.99	1.46	0.93	0.09	0.60
Panel B: Corporate governance								
Board ownership (%)	17.08	6.94	16.71	6.10	18.00	9.14	−4.11*	−6.56*
Board size	10.85	11.00	11.05	11.00	10.55	10.00	4.68*	3.79*
Fraction independent directors (%)	36.23	33.33	32.10	30.77	42.29	40.00	−15.40*	−14.59*
Fraction female directors (%)	16.21	13.33	16.28	13.33	16.10	13.33	−0.16	−0.39
Dummy institution as majority shareholder	0.17	0.00	0.15	0.00	0.23	0.00	−6.68	0.65
Dummy family on board	0.22	0.00	0.13	0.00	0.44	0.00	−21.17*	0.21
Dummy split	0.73	1.00	0.71	1.00	0.77	1.00	−3.25*	0.53

The table reports the mean and median sample firm and corporate governance charactersitics. Firm characteristics include market value in million, operating cash flow per salee (%), return on assets (%), return on equity (%), and market to book value. Corporate governance covers board ownership, board size, percentage of independent directors, percentage of female directors, dummy variable if institution is majority shareholder, and dummy variable if chairman is not the chief officer.

Table 2: Summary statistics of R^2

	Mean	Median	Min	Max	Stdev
Full Period	0.3204	0.2840	0.0369	0.8592	0.1691
2002	0.3059	0.2643	0.0369	0.7174	0.1637
2003	0.2631	0.2454	0.0604	0.6540	0.1330
2004	0.3457	0.2888	0.0687	0.8230	0.1836
2005	0.2826	0.2682	0.0568	0.7712	0.1459
2006	0.2895	0.2539	0.0554	0.8334	0.1600
2007	0.3298	0.3022	0.0981	0.8592	0.1638
2008	0.4451	0.4448	0.0516	0.7974	0.1875
2009	0.2983	0.2736	0.0713	0.7593	0.1408
Financial firms	0.4128	0.3902	0.0467	0.8592	0.2212
Non-financial firms	0.2939	0.2707	0.0369	0.7888	0.1418

The table reports descriptive statistics of R^2 which are computed from Morck *et al.* (2000)'s model by year for each firm as follows:

$$r_{it} = \alpha_i + \beta_{1,i} r_{m,j,t} + \beta_{2,i}[r_{US,t} + EX_{jt}] + \beta_{3,i} r_{m,j,t-1} + \beta_{4,i}[r_{US,t-1} + EX_{j,t-1}] + \\ + \beta_{5,i} r_{m,j,t-2} + \beta_{6,i}[r_{US,t-2} + EX_{j,t-2}] + \beta_{7,i} r_{m,j,t+1} + \beta_{8,i}[r_{US,t+1} + EX_{j,t+1}] + \\ + \beta_{9,i} r_{m,j,t+2} + \beta_{10,i}[r_{US,t+2} + EX_{j,t+2}]$$

Table 3: Correlation Matrix

	R^2	DIOWN	BSIZE	SPLIT	INDE	FEMALE	FAM
DIOWN	*−0.20167*	–	–	–	–	–	–
BSIZE	−0.01893	−0.15484	–	–	–	–	–
SPLIT	*0.07007*	*−0.16448*	*0.11844*	–	–	–	–
INDE	*0.09816*	*0.09092*	*−0.44387*	−0.05484	–	–	–
FEMALE	−0.02514	*0.14440*	*−0.09956*	*−0.09844*	0.03009	–	–
FAM	−0.02786	*0.44992*	−0.05147	*−0.09377*	−0.04001	0.0625	–
INSTI	*−0.07420*	*−0.15881*	−0.01196	0.01532	0.02823	−0.0545	*−0.10896*

The table reports the Pearson correlation between R^2 coefficients, corporate governance variables and control variables. DIOWN is board ownership (%), BSIZE is total number of directors on board, INDEP is the fraction of independent directors on board, FEMALE is the fraction of female directors on board, DINST is a dummy variable equal to 1 (zero otherwise) if a financial institution is the majority shareholder, DFAM is a dummy variable equal to 1 (zero otherwise) if a family is on the board, and SPLIT is a dummy variable equal to 1 (zero otherwise) if the CEO and chairman roles are split.

Table 4: The impact of corporate governance on R^2 across firms

	(1)	(2)
Intercept	0.2034	−0.0396
	(2.80)	(−0.11)
Firm size	0.0356	0.034
	(11.14)	(10.51)
Firm leverage	0.0992	0.0922
	(4.99)	(4.59)
Dummy financial industry	−0.0764	0.0629
	(−3.95)	(0.35)
Dummy financial crisis year	0.0927	0.0934
	(8.62)	(8.70)
DIOWN	−0.0008	−0.0037
	(−3.44)	(−2.63)
BSIZE	−0.0297	0.0225
	(−1.49)	(0.15)
SPLIT	−0.0038	0.1895
	(−0.37)	(2.41)
INDE	0.0009	0.0015
	(1.94)	(0.67)
FEMALE	0.0005	0.001
	(1.72)	(0.33)
FAM	−0.007	−0.009
	(−0.60)	(−0.76)
INSTI	−0.02	−0.0177
	(−1.92)	(−1.70)
Dummy financial industry * DIOWN	–	0.0015
	–	(2.06)
Dummy financial industry * SPLIT	–	−0.0999
	–	(−2.48)
Adj r-square	0.3187	0.324

The table shows the coefficients from regression model. The dependent variables are R^2 values. The explanatory variables are firm size (the natural log of market value), firm leverage (debt to total assets) and dummy financial industry (a dummy variable equal to 1(zero otherwise) if the firm is in the financial sector), DIOWN is director ownership (%), BSIZE is the natural log of number of directors, SPLIT is a dummy variable equal to 1 (zero otherwise) if the CEO and chairman roles are split, INDE is the fraction of independent directors on board, FEMALE is the fraction of female directors on board, FAM is a dummy variable equal to 1 (zero otherwise) if the firm is run by a family, and INSTI is a dummy variable equal to 1 (zero otherwise) if an institution is the majority shareholder. T-statistics are reported under each coefficient.

R^2 levels during 2007 through to 2009. Dummy variables are included in our main tests to ensure we capture any effects from the financial crisis.

4.1 Main Results

Table 3 presents the Pearson Correlation Matrix of R^2 and our main corporate governance variables. As predicted, R^2 is negatively correlated with institutional ownership. The variable is also negatively associated with Director Ownership, which suggests that Jensen and Meckling's (1976) hypothesis that increasing managerial ownership will reduce agency conflicts is valid for the Thai context. Surprisingly, we find that firms with more independent directors and those that split the positions of CEO and chairman have high R^2 values. However, the correlations may be misleading given that there are strong relationships among the explanatory variables. For example, the positive correlation between firms that have a separate chairman and chief executive and high R^2 is moderated by both variables' negative correlation to Director Ownership (*DIOWN*). There are clearly a number of statistically significant interactions between our corporate governance variables, and these are modeled accordingly.

Table 5: The impact of changes of corporate governance on changes in R^2 across firms

	(1)	(2)
Intercept	0.4279	−0.7960
	(4.36)	(−1.37)
Firm size	0.0068	0.0075
	(1.21)	(1.36)
Firm leverage	0.0199	0.0226
	(0.60)	(0.69)
Dummy financial industry	−0.0642	0.5519
	(−2.73)	(1.83)
Dummy financial crisis year	0.1117	0.1114
	(8.32)	(8.43)
DIOWN	−0.0012	−0.0057
	(−3.92)	(−3.60)
BSIZE	−0.0100	0.8905
	(−0.23)	(2.47)
SPLIT	−0.0133	0.2513
	(−1.09)	(2.38)
INDE	0.0016	−0.0025
	(2.48)	(−0.82)
FEMALE	−0.0010	−0.0140
	(−2.41)	(−2.33)
FAM	−0.0054	−0.0051
	(−0.39)	(−0.37)
INSTI	−0.0391	−0.0268
	(−3.14)	(−2.14)
Dummy financial industry * DIOWN	–	0.0024
	–	(2.86)
Dummy financial industry * BSIZE	–	−0.4532
	–	(−2.46)
Dummy financial industry * SPLIT	–	−0.1360
	–	(−2.52)
Dummy financial industry * FEMALE	–	0.0066
	–	(2.16)
Adj R-square	0.2033	0.2317

The table shows the coefficients from regression model. The dependent variables are changes of R^2 values. The explanatory variables are the changes of following variables: firm size (the natural log of market value), firm leverage (debt to total assets), dummy financial industry (a dummy variable equal to 1(zero otherwise) if the firm is in the financial sector), Dummy financial crisis year (a dummy variable equal to 1 (zero otherwise) if year is 2008), DIOWN is director ownership (%), BSIZE is the natural log of number of directors, SPLIT is a dummy variable equal to 1 (zero otherwise) if the CEO and chairman roles are split, INDE is the fraction of independent directors on board, FEMALE is the fraction of female directors on board, FAM is a dummy variable equal to 1 (zero otherwise) if the firm is run by a family, INSTI is a dummy variable equal to 1 (zero otherwise) if an institution is the majority shareholder, and the interactive variables. T-statistics are reported under each coefficient.

The results for the association between R^2 values and corporate governance provisions are presented in Table 4. Column 1 reports the regression results for full sample and column 2 and 3 report the results for 2002-2005 and 2006-2009, respectively. As expected, the coefficient on director ownership in all periods is significantly negative. Firms with large director ownership disclose more firm-specific information. Besides, stock prices of firms with large board size are typically more likely to absorb firm-specific information, especially in the period 2006-2009. Institutional majority shareholders have an influence on more firm-specific information disclosure only in full sample and the period 2002-2005. Surprisingly, the involvement of family on board does not have an impact on firm-specific information incorporated in stock prices. The coefficient on the control variables (firm size and financial leverage) is significantly positive. Large and high financial leverage firms are more likely to synchronise with market. The level of firm-specific information in stock prices increases with the financial firms.

Table 6: Ownership concentration over time

	2002-2009		2002-2005		2006-2009	
	Mean	Median	Mean	Median	Mean	Median
Largest shareholding (%)	31.7655	28.4500	30.4421	27.6250	33.3243	29.7200
Dummy presence of controlling shareholder	0.5623	1.0000	0.5482	1.0000	0.5789	1.0000
Dummy multiple controlling shareholder	0.0960	0.0000	0.0983	0.0000	0.0932	0.0000
Dummy management as controlling shareholder	0.1563	0.0000	0.1504	0.0000	0.1632	0.0000

The table reports the average statistics of ownership concentration. The measures of ownership concentration are % shares held by the largest shareholder, dummy variable if a shareholder or a family shareholder owns at least 25%, dummy variables if the firms have more than one controlling shareholders, and dummy variable if the controlling shareholder involves on the board.

Table 7: Frequency and profitability of insider trading over time

	2002-2009		2002-2005		2006-2009	
	Mean	Median	Mean	Median	Mean	Median
A. Buy						
No. of transactions	5,398		3,478		1,920	
No. of shares traded	668,703	20,000	479,916.2	18,700	1,194,468	30,000
Transaction value	8,590,145	336,000	10,793,460	315,000	3163830	370,000
AR(0)	*−0.4718*	−0.3173	*−0.4800*	−0.3362	*−0.4447*	−0.2760
CAR (1,2)	0.0722	0.0014	0.0408	0.0259	0.1025	0.0380
B. Sale						
No. of transactions	7,147		4,237		2910	
No. of shares traded	948,412	37,500	364,550.9	30,000	2,024,669	30,000
Transaction value	8,987,725	641,300	5,590,563	710,000	7,011,341	615,000
AR(0)	*1.1620*	0.5268	*1.2147*	0.4900	*1.1089*	0.5245
CAR (1,2)	−0.0021	−0.0935	−0.0185	−0.1361	−0.0337	−0.0520

The table reports the frequency and descriptive statistics of insider transactions. Panel A and B shows the statistics of buy and sale, respectively, for number of transactions, number of shares traded, transaction value and abnormal returns.

To measure the impact of changes in corporate governance provisions on idiosyncratic risk, we estimate the regression again in the form of changes. The findings in Table 5 show that the more institutional majority shareholder can increase firm-specific information disclosure in all periods. Firms with larger director ownership and greater proportion of independent or female directors tend to provide more firm-specific information, especially after the reform of principles of corporate governance. The coefficient of family joining on board is not significant in all cases. Like the level analysis, the change analysis exhibits the more synchronicity for larger firms. Financial firms also disclose more firm-specific information than non-financial firms do.

4.2 Contrasting the Impact of Director Ownership on Firm-Specific Information Disclosure with That of Ownership Concentration and Insider Trading

Last section suggests that high ownership is more likely to provide firm-specific information, regardless of the period. We will further look at the ownership concentration and insider trading in this section.

Table 8: The impact of ownership concentration and insider trading on the explanatory power of systematic risk

	(1)	(2)
Intercept	0.1830	0.1539
	(2.48)	(2.08)
Firm size	0.0441	0.0438
	(13.24)	(13.23)
Firm leverage	0.1019	0.1022
	(5.20)	(5.24)
Dummy financial industry	−0.0762	−0.0633
	(−3.91)	(−3.20)
Dummy financial crisis year	0.0637	0.0842
	(5.83)	(6.67)
DIOWN	−0.0008	−0.0008
	(−3.50)	(−3.46)
BSIZE	−0.0585	−0.0592
	(−2.93)	(−2.98)
INDE	0.0006	0.0006
	(1.38)	(1.47)
FEMALE	0.0004	0.0004
	(1.37)	(1.31)
INSTI	−0.0357	−0.0358
	(−3.42)	(−3.45)
FAM	−0.0133	−0.0143
	(−1.14)	(−1.23)
SPLIT	0.0038	0.0024
	(0.37)	(0.24)
LOWN	−0.0008	−0.0009
	(−3.33)	(−3.42)
Dummy insider trading	−0.0239	−0.0069
	(−2.31)	(−2.59)
Dummy finanical crisis * Dummy insider trading	–	−0.0737
	–	(−3.20)
Adj R-square	0.3526	0.3596

The table shows the coefficients from regression model. The dependent variables are R^2 values. The explanatory variables are firm size (the natural log of market value), firm leverage (debt to total assets), dummy financial industry (a dummy variable equal to 1(zero otherwise) if the firm is in the financial sector), Dummy financial crisis year (a dummy variable equal to 1 (zero otherwise) if year is 2008), DIOWN is director ownership (%), BSIZE is the natural log of number of directors, SPLIT is a dummy variable equal to 1 (zero otherwise) if the CEO and chairman roles are split, INDE is the fraction of independent directors on board, FEMALE is the fraction of female directors on board, FAM is a dummy variable equal to 1 (zero otherwise) if the firm is run by a family, INSTI is a dummy variable equal to 1 (zero otherwise) if an institution is the majority shareholder, LOWN is the largest director ownership (%), Dummy insider trading (a dummy variable equal to 1 (zero otherwise) if there exists insider trading in the corresponding firm-year, and the interactive variables. T-statistics are reported under each coefficient.

From Table 6, the largest shareholder owns about 30% on average over the period 2000-2009. There are approximately 56% of the firms having more than 25% shareholding and nearly 10% of the firms are held by multiple controlling shareholders. Besides, 15% of firms have their directors as controlling shareholders. The summary statistics of director trading is shown in Table 7. There are more sale transactions (7,147 trades) than buy transactions (5,398 trades) over the full sample. Both buy and sale transactions are more concentrated in 2002-2005. Transaction size by the number and value of shares traded is generally smaller for buy than that for sale. Further, the directors tend to buy (sell) when the stocks are underperform (outperform) relative to the market.

To consider the impact of ownership concentration and insider trading on firm-specific information disclosure, we add these two variables into regression equation. Table 8 presents the regression results. For corporate governance variables, only institutional majority shareholder introduces more firm-specific information in all periods. A couple of corporate governance variables have an impact on firm-specific information disclosure for the full

Table 9: The relationship between quality of financial disclosures and corporate governance

	Proxy 1 (logit model)	Proxy 2 (regression model)
Intercept	9.7684	5.2603
	(8.05)	(2.03)
Firm size	*0.2499*	*1.4877*
	(2.15)	*(3.16)*
Firm leverage	−0.1838	−3.6637
	(0.04)	(−0.54)
Dummy financial industry	0.1156	1.5631
	(0.03)	(0.32)
DIOWN	*−0.0208*	*−0.0870*
	(2.71)	*(−2.93)*
BSIZE	*−2.8309*	*−1.5873*
	(−8.67)	*(−2.24)*
INDE	−0.0350	−0.0696
	(1.80)	(−0.37)
FEMALE	−0.0386	−0.1408
	(−1.48)	(−1.19)
INSTI	*0.4048*	*0.90314*
	(2.75)	*(2.21)*
FAM	*0.9355*	*1.1710*
	(3.61)	*(2.29)*
SPLIT	−0.0135	7.1151
	(1.34)	(1.84)
Adj R-square	0.1517	0.0752

The table shows the coefficients from regression model. The dependent variables are proxies for quality disclosure: Proxy 1 (dummy high quality disclosures for the firms with less dispersed forecasts and smaller forecast errors), and Proxy 2 (analyst's information precision from BKLS model). The explanatory variables firm size (the natural log of market value), firm leverage (debt to total assets), dummy financial industry (a dummy variable equal to 1 (zero otherwise) if the firm is in the financial sector), Dummy financial crisis year (a dummy variable equal to 1 (zero otherwise) if year is 2008), DIOWN is director ownership (%), BSIZE is the natural log of number of directors, SPLIT is a dummy variable equal to 1 (zero otherwise) if the CEO and chairman roles are split, INDE is the fraction of independent directors on board, FEMALE is the fraction of female directors on board, FAM is a dummy variable equal to 1 (zero otherwise) if the firm is run by a family, INSTI is a dummy variable equal to 1 (zero otherwise) if an institution is the majority shareholder. T-Statistics are reported under each coefficient.

sample and only after the corporate governance reform: director ownership and board size. Likewise, high shareholding by the largest shareholder and the presence of insider trading provide more firm-specific information to the market, especially in 2007-2009.

4.3 Additional Test for Quality Disclosure

In this section, we use two proxies as a measure of quality disclosure. The results are presented in Table 9. The positive signs of institutional majority shareholder and family joining on board indicate higher quality disclosure. However, high board ownership and large board size, the lower quality disclosure.

5 Conclusion

In this paper, we study the impact of corporate governance provisions on firm-specific information that is incorporated into stock prices. In general, director holdings are stable on average at 17%. After the principles of corporate governance were reformed in 2006, Thai listed firms typically increase the split of CEO and chairman, the fraction of inde-

pendent directors, the fraction of female on board, the involvement of family on board, and institutional majority shareholders.

Using R^2 as the proxy for stock price transparency, we find that stock prices are more likely to capture firm-specific information in case of high director ownership, and the presence of the institutional majority shareholder and family joining on board. We further examine the effect of ownership concentration and insider trading. We document the more the largest shareholders own the stocks and the more the insiders trade their own stocks lead to the more firm specific information to the market. To take into account of quality disclosure, we find that high quality disclosure is evident for firms with the existence of institutional majority shareholder and family joining on board. The split of CEO and chairman as well as the independent directors do not have significant in any case.

Overall, our research contributes to the literature and practical implication to both investors and market regulators by providing further evidence on the relationship between corporate governance provisions and firm-specific information disclosure. Firms with better corporate governance are more likely to have firm-specific information incorporated into their stocks, so are less likely to be synchronous with the market during financial crisis. Our finding suggests that institutional majority shareholders have an important role on both the greater incorporation of firm-specific information into stock prices and the higher quality disclosure.

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