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Interbank Market, Stock Market and Bank Performance in East Asia*

Masahiro Inoguchi[†]

Abstract

This paper investigates the role of stock markets and interbank markets in measuring bank performance in Malaysia and Thailand. Research on whether financial markets have served in terms of assessment and discipline of banks has been done in advanced countries; however, there has been limited research on this question as it applies to banks in the East Asian countries. The stock price of individual banks can reflect a bank's risk profile and interbank loans to domestic banks that have higher risk and bad performance may decline. This functioning of the stock and interbank markets is particularly important from the view of maintaining and strengthening the domestic banking systems in East Asia. This paper examines whether interbank borrowings and stock prices of domestic commercial banks responded to bank risk and performance in Malaysia and Thailand. The analysis employs panel regression techniques. The regression results suggest that interbank borrowing has been affected by bank risk variables since the crisis in Thailand, while foreign currency borrowings of domestic banks may have responded to bank risk over the entire period. In Malaysia, the regression shows that bank risk influenced each bank's stock price in 1997 and 1998. The results for Thailand suggest that bank risk and cost affected bank stock prices after the crisis in Thailand.

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1. Introduction

A sound banking system is important for any economy, but this is particularly true in East Asia where a significant number of companies rely heavily on bank loans for financing. While the crisis of 1997 prejudiced banking systems in East Asia, the governments in the affected countries have been making improvements to their banking systems since then. In particular, these countries have tried to address the problem of nonperforming loans, and have sought to rebuild the banking system through the restructuring and consolidation of domestic banks. The authorities have also continued to pursue reforms of the banking systems, and previous articles have described this process in East Asian countries. However, while the question of whether financial markets have fulfilled the function of assessment and discipline of banks has been explored in advanced countries, little work has been done for Asia.¹ Yet it is an important issue for Asia in terms of maintaining and strengthening the domestic banking systems in these countries. This paper examines the role of the stock and interbank markets in measuring bank performance in Malaysia and Thailand.

Previous empirical analyses have examined the question of whether bank stock prices reflect their risk characteristics, risks and other information in industrialized countries. For example, Brewer et al. (2003) examined stock prices of Japanese banks during the banking crisis of the mid-1990s. Their research suggests that shareholders of banks responded to the financial conditions of individual banks and that the market was able to differentiate between banks in its response to the failures. This implies that the stock markets were effective in monitoring bank performance and in helping to establish discipline. Berger et al. (2000) focused on assessments of bank holding companies in the U.S., and compared the value of information from government supervisors, bond markets and equity markets. Their findings suggest that equity market investors tend to be concerned with future changes in bank holding companies' performance. While Franke and Krahn (2005) discussed the securitization of loans by banks in Europe and the U.S., they also analyzed the influence of banks' securitization announcements on their stock returns.² In other words, Franke and Krahn also explored the impacts of risk transfers on bank stock prices.

Some authors have considered the discipline effect of the deposit market on banks.³ Demirgüç-Kunt and Huizinga (2004) examined the impact of deposit insurance on deposit interest rates and market discipline using cross-country information. They suggest that the existence of explicit insurance could lower bank interest rates and reduce the market discipline effect on banks by their creditors. Peria and Schmukler (2001) analyzed the relationship between market discipline and deposit insurance, and

the impact of the banking crisis on market discipline in Argentina, Chile and Mexico. They showed that depositors punished banks for risky behavior by withdrawing their deposits and by requiring higher interest rates. In addition, Peria and Schmukler suggest that the relative importance of market discipline rose after the banking crisis.⁴ Hosono et al. (2005) explored the effectiveness of market discipline by depositors in Asian countries by investigating whether deposit interest rates and deposit growth rates responded to bank risks. They concluded that market discipline seemed to become stronger in Indonesia after 1999, though the risk sensitivity of depositors decreased after the crisis in Korea and Thailand.⁵

From the view of discipline within banks, not many authors have examined the effectiveness of cooperative arrangements among banks.⁶ Calomiris and Khan (1996) analyzed the “Suffolk System,” the interbank note-clearing network that was in operation in the U.S. from the 1820s through the 1850s. They concluded that monitoring among banks may be efficient.

This paper investigates whether interbank markets and stock markets can provide an assessment of bank performance. As stated previously, the stock price of individual banks can reflect a bank’s risk profile in advanced economies. If this is also true of East Asian countries, then bank stock prices can serve as useful information in assessing banks.⁷ On the other hand, if stock markets cannot respond to changes in a bank’s characteristics and risk profile, the stock market may have problems that need to be addressed. In interbank markets in advanced countries, it would appear that each bank assesses the performance of other banks and the risks of lending to them. However, previous articles have not addressed the circumstances and functioning of interbank markets in Asian countries. While Hosono et al. (2005) estimated the relationships between bank deposits and banks’ balance sheet data, the present study expands on previous research by also employing panel data of banks to explore whether interbank borrowing and stock prices responded to the performance of individual banks in Malaysia and Thailand. In addition, this paper examines how foreign currency borrowings reacted to domestic bank performance in Thailand; this is significant because foreign liabilities of domestic banks were large and had an impact on the financial system during the crisis.

This paper suggests that, in Thailand, the interbank market has taken into account bank performance since the crisis. In addition, foreign currency borrowings of domestic banks may have responded to conditions of bank risk in Thailand. In the case of stock markets, this analysis shows that bank risk influenced each bank’s stock price in 1997 and 1998 in Malaysia, that bank risks affected the stock price after the crisis, and that

overhead costs also have a correlation to the stock price in Thailand. These findings imply that improving the interbank and stock markets may be necessary in order for Malaysia to establish a sound banking system.

The outline of the paper is as follows. Section 2 reviews developments in the soundness of the banking sectors after the crisis in Malaysia and Thailand. Section 3 presents trends in stock prices and interbank borrowing of banks. Section 4 describes how the hypothesis is estimated using panel data of domestic banks. Section 5 provides concluding remarks.

2. Developments in the banking system after the crisis

In the crisis-affected countries, the authorities have made efforts to address problems of capitalization, governance, risk management and operational inefficiencies in the aftermath of the crisis. They have often implemented temporary nationalization of banks, and their efforts have included closures and consolidation of banks. In Malaysia and Thailand, the banking sectors have been consolidated.

In Malaysia, the number of commercial banks was reduced from 36 in 1997 to 22 by the beginning of 2007.⁸ The first step was the consolidation of financial institutions. Some commercial banks, finance companies and merchant banks were consolidated, while Bank Negara provided liquidity to weakened financial institutions.⁹ Second, mergers took place between banks and their finance company subsidiaries. Ownership also changed hands. While the average level of foreign ownership increased, the average level of state ownership among the top ten banks declined from 11 percent in 1997 to 3.5 percent in 2004. In addition, the level of nonperforming loans was reduced by selling them to the asset-management company in 1998 and 1999. Though the nonperforming loan ratio rose again in 2001, it fell in other years because of further restructuring of banks (for example, through write-offs and asset-sale programs). Malaysian banks have improved their asset quality and their nonperforming loan ratio has dropped since the crisis.

In Thailand, consolidation took place between financial companies (the number of financial companies declined from 92 before the crisis to 18 in 2003), while bank mergers reduced the number of commercial banks.¹⁰ Eight commercial banks were merged with other banks from December 1997 through November 1999. The authorities tried to support private bank recapitalization and had taken over six commercial banks by the summer of 1999. Though foreign ownership remains relatively limited, the level of average foreign ownership among the top banks has increased since authorities have relaxed the limit for foreign ownership of commercial banks. The nonperforming loan

ratio, which was 45 percent in 1998, had fallen significantly to 8.3 percent by 2005, but the recovery was not quick enough. Since then, the nonperforming loan ratio of private banks has remained high. Unlike what happened in other countries, in Thailand, some restructured loans were returned to nonperforming status owing to limitations in debt reduction during the restructuring process.¹¹ The return to nonperforming-loan status slowed after 2000 and the banking sector has become more profitable since 2003 due to economic recovery.

3. An overview of stock prices and interbank borrowings of banks

This section illustrates the fluctuations in bank stock prices and interbank borrowings in Malaysia and Thailand. Figures 1-1 and 1-2 illustrate the rate of average stock price changes of domestic banks and that of stock price indices in these countries. Table 1 shows the changing rates of interbank borrowings and foreign currency borrowings, and their ratio to total liabilities in banks. Since the central bank lent to domestic banks, especially during the crisis, interbank borrowings contain loans from both the central bank and other domestic banks. Figures 2-1 and 2-2 depict the amount of domestic bank borrowing from the central bank and other bank firms in Malaysia and Thailand.¹²

A comparison of domestic bank stock price changes with changes in the stock market index for Malaysia is shown in Figure 1-1. While movement in the change in average bank stock price is similar to that of the market index, the fluctuation of average stock prices of banks is larger than that of the market index. These statistics decreased in 1997 and 1998, and rose in 1999 and 2000. On the other hand, the magnitude of the increase in bank stock prices, especially in 1999, was larger than that of the stock market index. While the rate of change in the stock market index was positive in 2003, the average stock price change of domestic banks was negative in 2003.

Figure 1-2 shows that, in Thailand, movements in the average stock prices of banks and the stock market index are similar. However, the rate of change of average stock prices was negative and the rate of change in the market index was positive in 1995 and 1996. Bank stock prices increased more than the stock market index in 2003 and 2004. In the case of Thailand, the fluctuation in average stock prices of banks is also larger than that of the stock market index.

Table 1 shows the rates of changes in interbank deposits and borrowings, foreign currency borrowing, and their ratio to total liabilities in domestic commercial banks in Malaysia and Thailand. In Malaysia, though the rate of change in interbank borrowings was positive in 1997 and 1998, it became negative in 1999. While the ratio of interbank

borrowings to liability of domestic commercial banks declined from 1997 to 1999, it did not move precipitously during the entire period. In Thailand, the rates of change in interbank borrowings and foreign currency borrowings extended in 1997 and became negative in 1998. They were positive again in 2003. The ratios of interbank borrowings and foreign currency borrowings to liability of domestic commercial banks were large in 1997 and declined in 1998; it has not moved drastically since then.

Figure 2-1 illustrates movements in the amount of domestic commercial and merchant bank borrowings from Bank Negara, commercial banks, merchant banks and other financial institutions. Borrowings from Bank Negara and commercial banks expanded drastically in 1997 and fell in 1998. While borrowings from Bank Negara boosted only after the crisis, those from commercial banks are larger than borrowings from other kind institutions and this number has increased since the latter half of 2005. This implies that Bank Negara provided liquidity to domestic banks in the confusing period following the crisis.

Figure 2-2 shows movements in the amount of domestic commercial bank borrowings from the Bank of Thailand (BOT) and other financial institutions. The amount of borrowings from financial institutions are larger than those from the BOT except for 1997 and 1998. Though borrowings from the BOT were extended in 2005, the BOT enhanced loans to domestic banks in 1997 and 1998 in order to provide liquidity.

4. Empirical analysis

4.1 Data and terms

Due to constraints of data availability, this paper considers the period 1996–2006 in Malaysia. In Thailand, the period analyzed for interbank borrowings and foreign currency borrowings is 1992–2006 and for stock prices, the period examined is 1993–2006. In addition, in examining the period after the crisis, data were taken from 2000–06, because any influence of the crisis could be eliminated in 2000 or later. The panel data of domestic banks—which includes interbank deposits and borrowings, equity, liquid assets, overhead costs and foreign currency borrowings—were all taken from the Bankscope database. The variables for macroeconomic conditions—nominal GDP growth rates and short-term interest rates—were obtained from the CEIC database. Stock prices of domestic banks came from the Datastream database and data on returns on bank assets were from the Bankscope database. The stock price indices, the KLSE index in Malaysia and the SET index in Thailand were obtained from the CEIC database.

The analysis uses data of domestic commercial and merchant banks in Malaysia and of commercial banks in Thailand.¹³ Some banks were not included in the study, since they either merged or disappeared after the crisis. In addition, some banks were included in the regression for the period following the crisis because of the emergence of new banks. The number of domestic banks analyzed for interbank borrowings is 14 in Malaysia and 10 in Thailand. The number of banks in the tests for the foreign currency borrowings is 8 in Thailand. The number of domestic banks analyzed for interbank borrowings after the crisis is 15 in Malaysia and 12 in Thailand. The number of banks in the tests for the foreign currency borrowings after the crisis is 10 in Thailand. The number of domestic banks analyzed for the stock prices is 7 in Malaysia and 8 in Thailand, since stock price data for some banks are lacking. The number of domestic banks in the tests for stock prices after the crisis is 7 in Malaysia and 10 in Thailand.

4.2 Methodology

This paper explores whether stock prices and interbank borrowings of banks responded to the performance and risk levels of each bank. The analysis employs panel regression techniques, in keeping with previous studies which focused on the relationships between deposits or stock prices and the performance of banks.¹⁴ In particular, this paper examines the responses of bank stock prices and interbank borrowings to changes in the risk and performance of domestic commercial banks with reference to macroeconomic or stock market conditions. In the case of Thailand, the analysis includes a test for the impact of bank conditions on foreign currency borrowings.¹⁵ The analyses also test the periods after the crisis.

Following Demirgüç-Kunt and Huizinga (2004) and Hosono et al. (2005), the regression equation for interbank borrowings is the following reduced form;

$$Y_{it} = \alpha_1 + \beta_1 X_{i,t-1} + \beta_2 C_{i,t-1} + \beta_3 M_{t-1} + \gamma D_t X_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

where,

Y_{it} : the rate of change in interbank borrowing (for bank i and period t),

$X_{i,t-1}$: the bank risk variable,

$C_{i,t-1}$: the bank characteristic variables,

M_{t-1} : the macroeconomic variables,

D_t : crisis dummy variable for the year 1997 and 1998, and,

$\varepsilon_{i,t}$ is residual error. ¹⁶

Bank risk is measured by equity (*Equity*) or liquidity assets (*Liquid*) divided by total assets. Bank characteristic variables include the logarithm of total bank assets (*Bank size*) and overhead cost (*Overhead*) divided by total assets. Controlled variables for macroeconomic conditions are nominal GDP growth rates (*Growth*) and short-term interest rate level (*Interest rate*).¹⁷ These explanatory variables are lagged one period. The dummy years are 1997 and 1998, since interbank borrowings fluctuated more widely in these years as compared to other years. In addition, since borrowings from the central bank expanded in 1997 and 1998, the coefficients of bank risks in these periods could be affected by central bank loans to bad banks. In the regression for the period following the crisis, the dummy variables are dropped out. When we analyze the influence of bank risk on foreign currency borrowings of domestic banks in Thailand, the variables for macroeconomic conditions include the foreign exchange rates (*FX*).¹⁸

Some theories have claimed that well-capitalized banks face lower insolvency risk and expected bankruptcy costs, and that a higher bank equity ratio implies lower risk. High levels of liquid assets for banks also imply that the default risk is low. Therefore, banks may decrease interbank lending to riskier banks that have low equity or low liquid assets. Meanwhile, the authorities may increase lending to riskier domestic banks during the crisis. This implies that interbank borrowings of riskier banks may have increased, especially in 1997 and 1998. While different banks have different organizational structures and thus different overhead costs, high overhead costs may reflect cost inefficiencies. When the overhead cost is large in a bank, interbank lending to this bank may decline.

In the test for bank stock markets, according to Brewer et al. (2003), Franke and Krahen (2005), and Berger et al. (2000), the equation is changed as follows:

$$R_{it} = \alpha_2 + \beta_4 X_{i,t-1} + \beta_5 C_{i,t-1} + \beta_6 RS_t + \delta D_t X_{i,t-1} + \phi_{i,t} \quad (2)$$

where R_{it} is the ratio of change in stock price of bank i and period t , and $\phi_{i,t}$ is the residual error. This analysis employs the same explanatory variables used in the regression for interbank borrowings, except for $ROA_{i,t-1}$ and RS_t .¹⁹ RS_t is the rates of change in the stock market indices—the KLSE index in Malaysia and the SET index in Thailand—which are enclosed in the equation instead of the macroeconomic variables in the regression for interbank borrowings. This equation can assimilate the

return of assets ($ROA_{i,t-1}$) as a variable of bank risk ($X_{i,t-1}$). The crisis dummy variable (D) is also for years 1997 and 1998, since the average return ratios of stock price of banks were negative in these years.

In a similar way, the higher is bank risk, the lower are the stock prices of this bank. When liquidity and equity of banks are both high, the stock price may rise. When the ROA level is high, the stock price of the bank can also increase. Thus, the relationship between the stock price of each bank and the stock market index is expected to be positive.

4.3 Regression results

This section explains the results of the panel regression for domestic banks in Malaysia and Thailand. Table 3-1 shows the regression results of interbank borrowings. In Malaysia, while the coefficients of bank risk variables are not significant, the sign of the coefficients for *Overhead* and *Bank size* in the test using *Liquid* as risk variables are significant. The coefficients of the bank risk variables are not significant in Thailand, while the coefficients of *Growth* and *Bank size* are significantly positive.²⁰ These findings support the view that interbank loans may depend on conditions of the macroeconomy and bank size. In addition, the sign of the coefficient dummy for crisis for *Equity* and *Liquid* are significantly positive in Thailand. This result may imply that interbank lending responded to bank risks during and in the aftermath of the crisis.

Table 3-2 reports the regression results of interbank borrowings following the crisis. In the test using *Equity* as a bank risk variable in Malaysia, the coefficient of *Interest rate* is significant. In Thailand, the coefficients of *Interest rate* and *Growth* are significant and the sign of the coefficient of *Liquid* is significantly positive. These may suggest that bank risks and interest rates affected interbank borrowings after the crisis.

Tables 4-1 and 4-2 show the results of foreign currency borrowings in Thailand. When the test uses *Equity* as a bank risk variable, the coefficient of bank risk is significant and positive (Table 4-1). In the test after the crisis, the sign of the coefficient of the *Liquid* variable is significant and positive (Table 4-2). In addition, the coefficient of *Growth* is significantly positive in the period of 2000 or later. These suggest that there is a possibility that foreign currency borrowings responded to bank risk.

Table 5-1 illustrates the results of the regression for bank stock prices in Malaysia and Thailand. The coefficients of the stock market index are significantly positive in both countries. In the test using *Liquid* as the bank risk variable in Malaysia, the coefficient dummy is significant and positive. This implies that the stock prices of

Malaysian domestic banks may reflect bank risks in the aftermath of crisis. In Thai commercial banks, the sign of the coefficient of *Overhead* is significantly negative, though the coefficients of bank risk are not significant. This result suggests that the stock prices of banks are affected not by bank performance, but by the costs of banks and the level of stock market prices in Thailand.

Table 5-2 shows the regression results for bank stock prices after the crisis. In Malaysia, the coefficients of *RS* are significant and implies that there is no change after the crisis. In Thailand, while the coefficients of *RS* and *Overhead* are significant in the same way as in the results of the all-period regression, the coefficient of *Equity* is significantly positive. This may suggest that, in Thailand, stock prices of banks responded to bank risk after the crisis.

5. Conclusion

This paper investigates whether interbank borrowings and stock prices of domestic banks responded to bank risk and performance in Malaysia and Thailand. Both countries experienced the crisis of 1997 and tried to reform their banking systems by various means, including the closure and consolidation of banks. Previous articles have not analyzed the effect of these improvements on the banking system. From the view of constructing a sound banking system, research into the relationship between interbank borrowing or stock prices on banks and bank performance is important, because it can assess the role of the interbank market and the stock market in measuring the status of banks.

The panel regression results suggest that interbank borrowing was affected by bank risk variables during and after the crisis in Thailand, but that this effect is not significant in Malaysia. The results imply that interbank loans to commercial banks that have higher risk and bad performance may decline, and that the interbank market may have accounted for bank performance immediately following the crisis in Thailand. In addition, interest rates influenced interbank borrowings after the crisis in both countries. This supports the view that interbank markets have become more functional as compared to the period before the crisis in Malaysia and Thailand. While interbank borrowing reflects bank risk in Thailand only after the crisis, foreign currency borrowings of domestic banks may have responded to bank risk over the entire period.

In the case of the stock markets, the regression shows that bank risk influenced each bank's stock price in 1997 and 1998 in Malaysia and after the crisis in Thailand. The results for Thailand suggest that overhead cost affected bank stock prices in Thailand. This implies that bank stock prices responded to the conditions of individual banks in

Malaysia during and in the aftermath of the crisis, while bank stock prices may reflect bank risk after the crisis and responded to the cost of individual banks in Thailand.

In addressing the question of whether the interbank market and stock market can evaluate the risk and performance of domestic banks, the results of this study suggest that there is a difference between Malaysia and Thailand. In Thailand, these markets may have played an important role in the assessment of bank risk since the crisis. Because the interbank market and stock market may have not responded to bank performance in Malaysia except during the crisis in the stock market, improvement of these markets is significant in order to build a sound banking system, especially in Malaysia.²¹

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¹ Kho and Stulz (1999) used bank stock indices to test the impact of the Asian crisis on bank stocks.

² They found that the issues of asset-backed securities could increase the banks' beta based on the CAPM.

³ Goldberg and Hudgins (2002) concentrated on the role of uninsured deposits at thrift institutions. Their results indicate that uninsured depositors had incentives to monitor and discipline thrifts.

⁴ They insisted that the crisis had a greater impact on depositors than did introduction of the deposit insurance system.

⁵ Hosono et al. (2005) focused on Indonesia, Korea, Malaysia and Thailand. They declared that their results did not show the existence of the so-called “wake-up-call effect” which means that depositors become more aware of bank risks after bank failures.

⁶ As observed in Japan, the fault banks tended to find it difficult to borrow from other banks in interbank markets.

⁷ Government supervisors can also use this information.

⁸ These include locally-owned and foreign-owned banks.

⁹ The “merchant bank” in Malaysia changed its name to “investment bank” in 2006.

¹⁰ The number of commercial banks declined in the aftermath of the crisis. However, it increased after this period and there were 18 commercial banks by the beginning of 2007.

¹¹ The authorities established the Thailand Asset Management Company in 2001.

¹² Because each bank's data for interbank borrowings from domestic banks and from the central bank are not available as separate components, this paper shows only the aggregate amount data. These data come from the CEIC database.

¹³ The term “domestic bank” covers local ownership banks which are listed by the authorities.

¹⁴ We employ the fixed effects and the random effects least squares for panel analysis

according to the results of the Hausman test.

¹⁵ Since we cannot obtain data for foreign currency borrowings in Malaysia, this regression is conducted only for Thai banks.

¹⁶ Since this paper uses the reduced-form equation, the results cannot distinguish between the demand factor and the supply factor. In addition, according to the results of Hausman test, the equation has fixed or random effects.

¹⁷ The interbank call rates are employed as short-term interest rates in Malaysia and Thailand.

¹⁸ Table 2 shows the sample means and standard deviations of variables.

¹⁹ In a similar way as the regression for interbank borrowings, this analysis employs the fixed effects and the random effects least squares for panel analysis according to the results of the Hausman test.

²⁰ The coefficient of *Overhead* is significant and positive, which is not the expected sign.

²¹ The regression does not include some banks since they either merged or disappeared after the crisis. This may affect the results, especially for Malaysia.

Figure 1-1

Malaysia stock prices (rate of change)

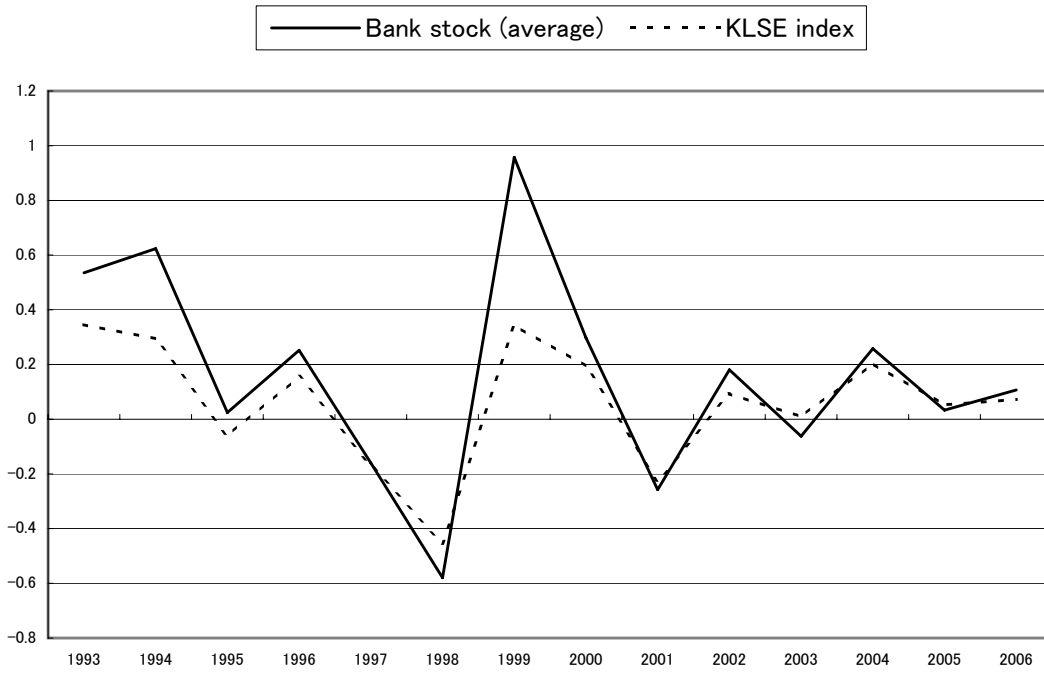


Figure 1-2

Thailand stock prices (rate of change)

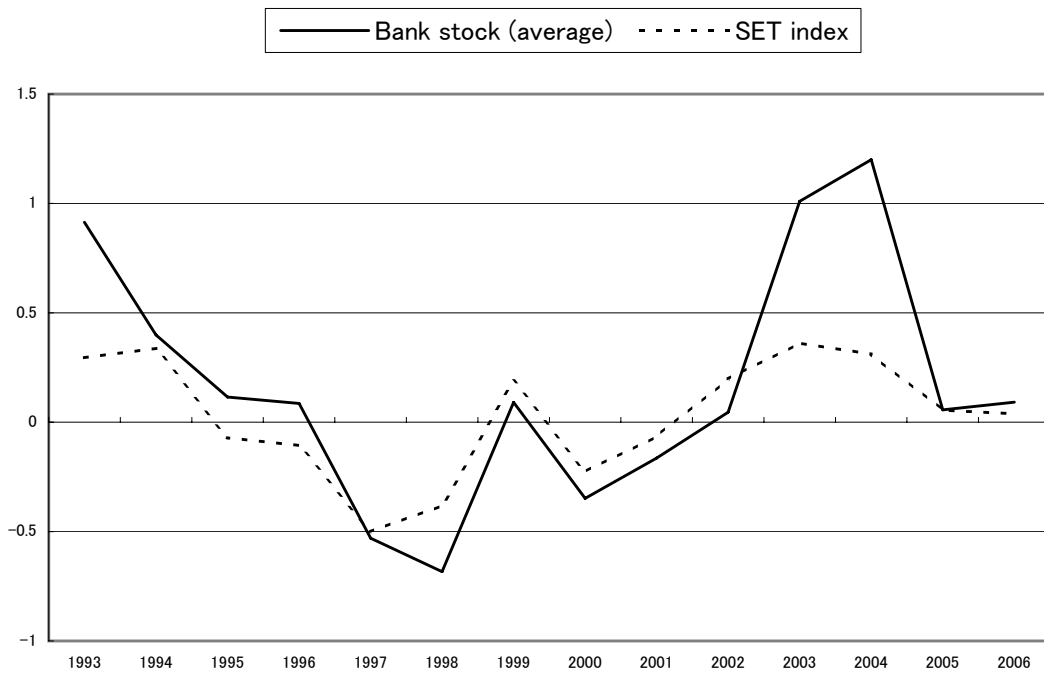


Figure 2-1

Malaysia: commercial banks and merchant bank

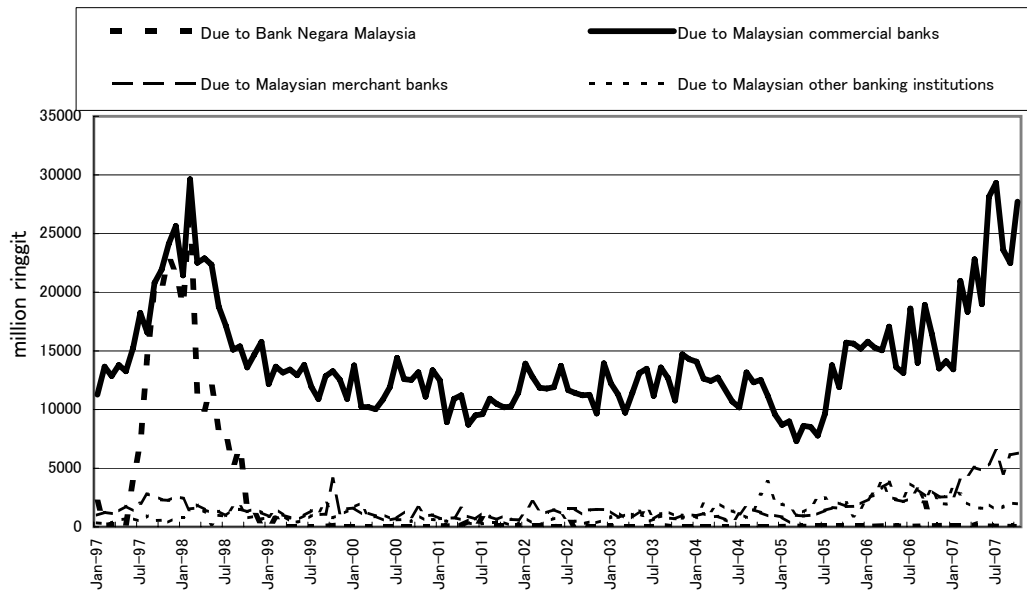


Figure2-2

Thailand: commercial banks

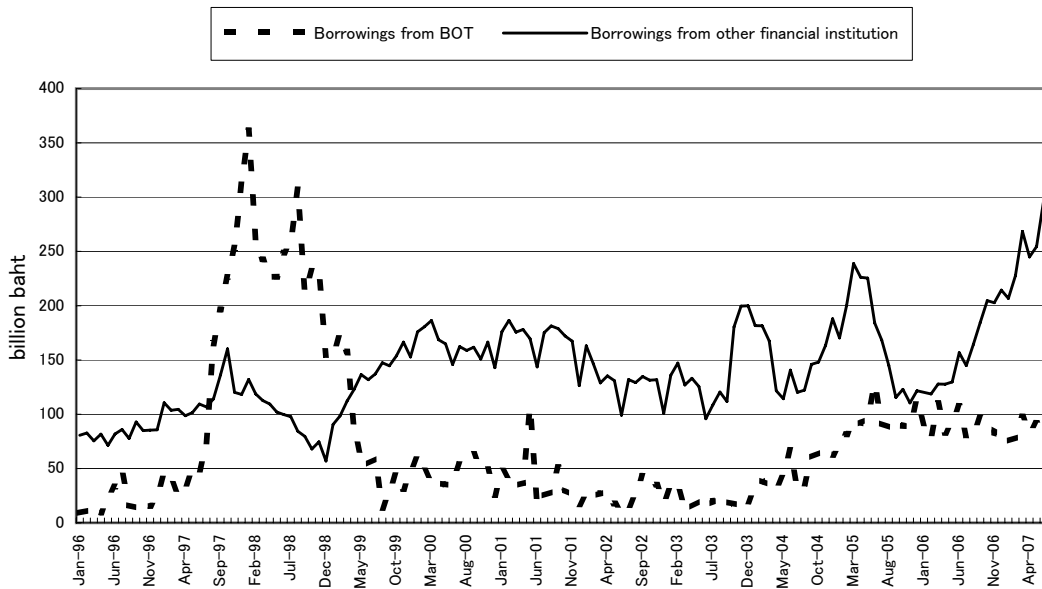


Table1 The rates of change in interbank borrowing and ratio

	<u>Malaysia</u>		<u>Thailand</u>			
	Interbank borrowing	Interbank borrowing / liability	Interbank borrowing	Interbank borrowing / liability	Foreign currency borrowing	Foreign currency borrowing / liability
1993			-0.78337	0.02439	0.68007	0.05975
1994			0.62522	0.04397	0.19753	0.05671
1995			0.37407	0.04956	0.11490	0.06074
1996	-0.10521	0.23374	0.24489	0.04557	0.05276	0.05741
1997	0.45396	0.24964	2.76047	0.16187	0.77698	0.10504
1998	0.01253	0.21375	-0.44786	0.06298	-0.60782	0.03462
1999	-0.09486	0.20385	-0.43375	0.04126	-0.33827	0.01630
2000	0.17053	0.23026	-0.12687	0.03513	-0.41296	0.00743
2001	0.07391	0.27373	-0.01755	0.04568	-0.32274	0.00728
2002	-0.00912	0.24015	-0.16157	0.04096	-0.24994	0.00632
2003	0.16521	0.23306	0.17274	0.04026	0.18423	0.00691
2004	0.17036	0.20874	0.70154	0.05911	0.27062	0.00509
2005	0.39977	0.19686	0.31649	0.04648	0.40950	0.01163
2006	0.54311	0.24646	-0.24729	0.02886	-0.23085	0.00459

Table2 Basic statistics

	Malaysia				Thailand			
	1996–2006		2000–2006		1992–2006		2000–2006	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Interbank borrowing	2.08294	16.08579	2.84055	19.44304	0.40722	1.46400	0.26476	0.96945
Stock price	0.10961	0.44460	0.09757	0.24603	0.17279	1.34880	0.27343	1.64767
Equity	0.12829	0.12235	0.13256	0.12735	0.06582	0.02320	0.08739	0.05848
Liquid	0.21871	0.10030	0.23182	0.10896	0.12448	0.05780	0.12694	0.07493
ROA	0.94591	2.30180	0.75890	2.16768	-0.22147	3.69254	0.96143	2.64350
Overhead	0.02039	0.02493	0.02240	0.02854	0.02194	0.00900	0.02338	0.00866
Bank size	23.33846	1.51141	23.37767	1.63226	26.52484	0.98948	26.47575	1.11741
Growth	0.08168	0.04910	0.08527	0.04938	0.07579	0.04649	0.07453	0.01931
Interest rate	4.19546	2.18009	2.81714	0.23378	5.79350	4.53687	2.21464	1.08690
stock index	0.02514	0.21752	0.05700	0.13399	0.03451	0.25427	0.09609	0.19446
Foreign borrowing					7.44569	46.63427	9.68560	56.49741
FX					0.03182	0.10755	0.00188	0.05633

Table 3-1 Regression results of interbank borrowings : 1996 – 2006 (Malaysia) ; 1992 – 2006 (Thailand)

	Malaysia		Thailand	
Equity	27.5432		-6.5867	
std	20.4502		4.9443	
Liquid		8.0504		0.7149
std		15.7258		2.1076
Overhead	3.0544	118.8731 *	112.6807 ***	109.5845 ***
std	97.4627	66.4401	13.1748	13.8861
Bank size	-1.3621	-1.6930 *	0.2990 ***	0.2714 **
std	1.0196	0.9709	0.1127	0.1205
Growth	30.0048	15.0217	11.5620 ***	10.5365 ***
std	26.8132	27.4606	2.5005	2.5802
Interest rate	-0.3171	-0.5682	-0.0411 *	-0.0218
std	0.6936	0.7908	0.0238	0.0271
D* Risk	-26.8692	-0.4956	20.8167 ***	7.5846 **
std	29.3972	20.5571	4.7972	3.7160
Constant	29.5518	38.5539	-10.3373 ***	-10.0048 ***
std	25.5931	25.3075	3.1864	3.3724
R-sq	0.097	0.085	0.377	0.313
sample size	154	154	150	150

Notes : *, **, and *** indicate that the statistics are significant at the 10%, 5%, and 1% level respectively.

Table 3-2 Regression results of interbank borrowings : 2000 – 2006

	Malaysia		Thailand	
Equity	-21.1393		0.1941	
std	68.9857		2.2311	
Liquid		18.8567		3.5024 **
std		30.2745		1.6960
Overhead	-224.8891	-245.9062 *	1.4356	-4.5064
std	148.0987	132.3480	16.4373	16.1605
Bank size	-22.3433	-20.9789 ***	0.0327	-0.1317
std	7.7511	7.3879	0.1482	0.1451
Growth	44.8054	41.4338	7.2070 **	9.0547 ***
std	39.6678	39.9423	3.5920	3.4467
Interest rate	-16.9410 *	-15.4556	-0.7894 ***	-0.7966 ***
std	9.5705	9.4501	0.2300	0.2239
Constant	574.4240	532.2784 ***	0.3371	4.2924
std	198.1013	187.3624	4.2833	4.0257
R-sq	0.112	0.115	0.189	0.231
sample size	105	105	84	84

Notes : *, **, and *** indicate that the statistics are significant at the 10%, 5%, and 1% level respectively.

Table 4-1 Regression results of foreign currency borrowings : 1992 – 2006

Thailand		
Equity	377.7395 *	
std	223.4615	
Liquid		179.2582
std		111.2758
Overhead	599.1340	837.2766
std	620.0241	653.1533
Bank size	-11.5055 **	-0.8663
std	5.4344	14.2505
Growth	11.8671	163.0362
std	141.8861	151.9969
Interest rate	-2.1713	-0.9516
std	1.6307	1.9949
FX	19.8898	-20.7551
std	79.4208	81.0097
D* Risk	69.6161	119.8004
std	209.9929	157.6408
Constant	288.0071 *	-16.4046
std	151.9894	398.0012
R-sq	0.082	0.037
sample size	120	120

Notes : *, **, and *** indicate that the statistics are significant at the 10%, 5%, and 1% level respectively.

Table 4-2 Regression results of foreign currency borrowings : 2000 – 2006

Thailand		
Equity	-122.6376	
std	157.2516	
Liquid		328.8794 ***
std		117.7218
Overhead	1958.1200	1409.7390
std	1358.6310	1365.6060
Bank size	-3.0325	-13.2862
std	10.4922	10.4258
Growth	439.5447 *	518.9624 **
std	259.5994	241.3471
Interest rate	-23.2799	-22.2720
std	17.9978	16.8760
FX	-67.2322	-108.7846
std	128.7545	121.0538
Constant	72.9797	297.7598
std	305.7587	292.0787
R-sq	0.135	0.221
sample size	70	70

Notes : *, **, and *** indicate that the statistics are significant at the 10%, 5%, and 1% level respectively.

Table 5-1 Regression results of stock prices : 1996 – 2006 (Malaysia) ; 1993 – 2006 (Thailand)

	Malaysia			Thailand		
Equity	2.1428			4.9710		
std	1.7121			5.8327		
Liquid		-0.6588			2.0958	
std		0.5929			2.3352	
ROA			-0.0236			-0.0027
std			0.0397			0.0411
Overhead	-10.5652	-10.9219	-12.8730	-50.17644 **	-56.0043 ***	-52.2389 **
std	7.9817	7.7368	8.2311	20.4685	20.6460	21.2329
Bank size	-0.0303	-0.0206	-0.0463	-0.1166	-0.1064	-0.1101
std	0.0453	0.0405	0.0457	0.1462	0.1834	0.1473
RS	1.8884 ***	1.9302 ***	1.8226 ***	2.1129 ***	1.9467 ***	2.0285 ***
std	0.1928	0.1842	0.1672	0.6722	0.6205	0.4883
D*Risk	1.7623	0.8560 *	0.0978	2.0210	0.5945	0.0718
std	1.3927	0.4758	0.0832	7.3238	4.2982	0.1893
Constant	0.7498	0.8319	1.3827	3.9799	3.9091	4.1909
std	1.1551	1.0069	1.1377	4.0950	4.9714	4.1463
R-sq	0.7074	0.7092	0.6951	0.1995	0.1999	0.1938
sample size	77	77	77	112	112	112

Notes : *, **, and *** indicate that the statistics are significant at the 10%, 5%, and 1% level respectively.

Table 5-2 Regression results of stock prices : 2000 – 2006

	Malaysia			Thailand		
Equity	-0.2575			11.8129 *		
std	1.4756			6.9598		
Liquid		0.4149			2.9735	
std		0.5558			3.1600	
ROA			0.0420			-0.0028
std			0.0297			0.0624
Overhead	0.5121	3.2303	0.9115	-108.2484 ***	-97.2763 **	-70.1667 **
std	8.3066	8.7712	7.9027	39.3140	39.0318	35.3257
Bank size	-0.0043	-0.0009	-0.0094	-0.5396	-0.6489	-0.4341
std	0.0467	0.0508	0.0379	0.4351	0.4410	0.3250
RS	1.3473 ***	1.3497 ***	1.3654 ***	2.0801 **	2.2827 **	2.3710 **
std	0.1796	0.1766	0.1839	0.8934	0.9075	1.1862
Constant	0.1407	-0.0983	0.2009	16.1738	19.2209	13.2559
std	1.2001	1.3158	0.9622	12.2745	12.3285	9.3656
R-sq	0.5410	0.5454	0.5641	0.1534	0.1599	0.1431
sample size	49	49	49	70	70	70

Notes : *, **, and *** indicate that the statistics are significant at the 10%, 5%, and 1% level respectively.

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