

# 亞洲地區商業銀行購併績效之研究

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## 摘要

在金融市場管制解禁及技術進步帶來的全球化浪潮下，使得全球金融市場內之購併活動蓬勃發展，而亞洲金融風暴過後，亞洲區域內金融市場的整併興盛，再加以近年來亞洲的崛起，造成亞洲地區金融機構整併成為眾所矚目的焦點，本研究探討亞洲金融風暴後 1997 年至 2007 年十年間，針對亞洲地區深具潛力之商業銀行為目標之購併案件檢視其宣告效果，並且進一步討論該宣告效果與購併案件型態是否相關，如：是否為跨國購併、購併雙方相對資產規模、主併者是否有豐富之購併經驗、購併交易金額等，研究結果顯示該購併之宣告對於主併者之股東在事件期 $[-1,+1]$ 及 $[-2,+2]$ 分別產生 $-0.72\%$ 及 $-1.48\%$ 的累積異常報酬，而此負的財富效果經檢定結果並無法找出與該購併案件型態相關之處，本研究也進一步針對主併者，以獲利性、流動性、經營效率、風險衡量以及放款集中度等五方面共 12 項財務指標進行分析，檢定主併者於購併活動前後三年之財務績效是否有所差異，並且加入代表時間之虛擬變數，以迴歸分析探討財務績效之改變主要集中在購併活動後多少年呈現顯著，以及其績效改變是否與亞洲金融風暴之影響有關，研究結果顯示對於主併者而言，從事購併活動後在流動性、經營效率、獲利性及風險衡量指標呈現績效改善之結果，但此績效改變平均在購併活動五年後才呈現顯著差異，且深受亞洲金融風暴之影響。

**關鍵詞：**銀行購併、事件研究法

# **A Study on Financial Performances of Asian Commercial Bank Mergers**

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## **ABSTRACT**

This study investigated the effects of merger announcements by acquiring firms in the Asian commercial banking sector during the period 1997-2007. First, it was found that the acquirers experienced declines in abnormal returns of 0.72% ( $t = -7.93$ ) over the period  $[-1, +1]$ , and 1.48% ( $t = -13.98$ ) over the period  $[-2, +2]$ . A regression model revealed that there were no significant correlations between the effects of the announcement and such variables as merger type, transaction value, frequency of mergers, and the relative assets of the target and acquirer. The paper also provides data on changes in operating performance of the acquiring banks. Bank mergers were shown to result in modest improvements in the liquidity, efficiency, profit ratios and risk profiles of the acquiring banks, but they also caused slight drop-offs in lending intensity. None of the significant performance changes in the acquiring banks were noticeable on average until 5 years after the merger announcement, except for the ratio of loan loss provisions to total loans, which decreased on the order of 1-2% per year and became significant 4-5 years after the merger announcement.

**Keywords: Bank mergers; Event study**

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## 1. Introduction

In the last two decades, advanced economies such as those of the United States and Europe have experienced a wave of bank mergers that have reshaped the global financial system (Berger et al., 2000). Since 1990, bank mergers have exploded in the US, with close to 400 in 1997 alone. This deluge resulted from the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, which eliminated interstate banking restrictions. Likewise, in the decade following the Asian financial crisis, the number of bank mergers in Asia increased 199%, from approximately 970 to 2900.<sup>1</sup> This wave of mergers has often been considered a response to widespread “overbanking” that went through several distinct phases, each linked to a particular set of macrostructures, regulations, technical issues, and bank strategies. As aggressive liberalization and globalization became the norm in the global financial industry, mergers were initiated worldwide as an external growth strategy. Banks have been motivated to grow because of the competition they face, not only from the banking sector (e.g., investment banks, insurance companies) but also from rivals that are not part of the financial industry.

The global wave of bank mergers began in the US. In the early 1980s, before the long-standing geographical restrictions of banking operations were revoked, many banks experienced distress. To prevent collapse, financial institutions began to merge, with assistance from the US government. This historic revocation gave banks the right to open branches nationwide and prompted a dramatic increase in mergers during the last two decades. This merger wave had considerable impact on the financial industry worldwide. Like the US, Europe is a huge market with many prosperous middle-market customers; its macroeconomic growth and income levels are generally high. Deregulation, such as that authorized by the EU Second Banking Directive (which required that EU member states

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<sup>1</sup> Source: SDC Platinum

recognize one another's banking laws and licenses) accelerated the merger rate and increased financial activity. All this resulted in two new merger waves, one in 1992 and the other in 1999. It is important to note that the bank mergers occurred for different reasons in the US and Europe. In the US, the goal was to increase market share domestically. In Europe, it was to increase market share within the multiple nations of the European community, as evidenced by the creation of the Pan-European Bank Group.

The crucial event in Asia during this period was the Asian Financial Crisis, which lasted from late 1997 to early 1999. This calamity raised fears of a worldwide economic meltdown. It also had significant macro-level effects in several Asian countries, including sharp reductions in the values of currencies, stocks, and other assets.

The real domestic product growth rates in Europe, North American, and the Asia Pacific region following recovery from the crisis are shown in Figure 1. These data reveal that, except for the period of the Asian Financial Crisis, the growth in real GDP from 1980 to 2008 was greater in Asia and the Pacific than in North America and Europe. This real growth in GDP reflects an increase in the value of all the final goods and services produced within a nation in a given year; thus, it is a measure of economic development. In the 20<sup>th</sup> century, Asia is considered to be the area with the highest growth overall. This trend is expected to continue in the 21<sup>st</sup> century, with the majority of the economic growth in the region fuelled by the rapidly expanding economies of China and India, coupled with significant growth in certain parts of South Asia, Southeast Asia, and especially East Asia. Of the ten fastest growing countries in the world, half are in Asia (CIA World Fact Book<sup>2</sup>, 2008).

According to the 2003 report of the bank holding company Goldman Sachs, there has also been rapid economic growth in the developing economies of Brazil, Russia, India and

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<sup>2</sup> The CIA World Fact Book is a reference book produced by the US Central Intelligence Agency. Information about all countries of the world is presented in almanac style.



China (collective represented by the acronym ‘BRICs’); by 2050, the combined economies of the BRICs are expected to eclipse the combined economies of the currently richest countries in the world. The report also implies that economic growth in Asia has been accelerating. In order to meet these challenges, non-Asian-based financial institutions must extend their business networks to Asia if they want to capture opportunities in contemporary Asian markets. In Asia, on the other hand, it is necessary that regional financial centres integrate so they can match the quality and diversity of products offered by comparable institutions in London and New York.

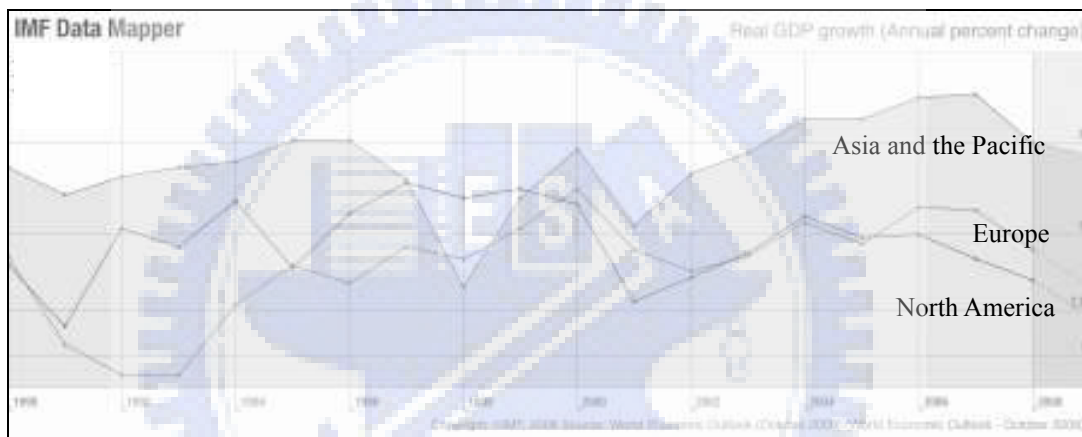


Figure 1 Real GDP Growth Rate 1980-2010 (Expected)  
Source: International Monetary Fund

Figure 2 presents the losses incurred during the first major international crisis in Asian markets in 2007. Compared to those in the West, the Asian economies were relatively stable during this period and the losses relatively low. However, the data also reveal that for Asia, new challenges loom on the horizon. The rest of the world will have to react to this emergence of Asian economic power.

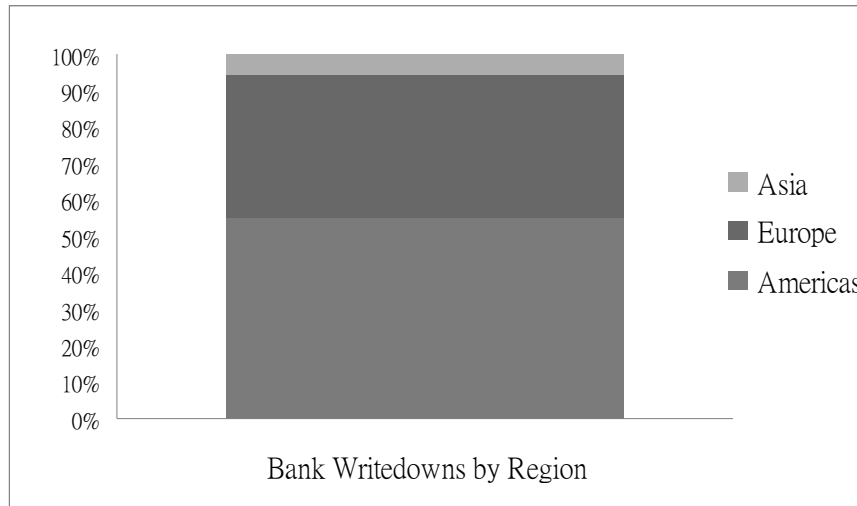


Figure 2 Financial Sector Losses from 2007 (Q2) to Aug 2008  
 Source: International Monetary Fund

Because they exist in a predominantly high-growth area, Asian financial markets are viewed by potential acquirers with ambitious expansion plans as virgin markets, compared to those of Europe and the US. Table 1 shows that the participants in the top ten global bank mergers from 1997 to 2007, ranked according to the value of the transaction, are mainly from the US, Japan, and Europe.

Before the 1990s, bank mergers in Japan were rarely seen, except for a handful of rescue mergers. But nowadays, bank mergers are not uncommon in Japan. Deregulation and the 1990s recession led to an increase in Japanese bank mergers. In the aftermath of the banking crisis of 1998, which resulted in several major bank failures, the Japanese banking industry became fluid and the number of bank mergers increased dramatically. The fact that these Japanese transactions were so prosperous implies that we should pay attention not only to the US and Europe, but also Asia when analyzing bank mergers.

These top ten bank mergers were all domestic. It is worth noting that such domestic mergers in the banking industry are most often launched because legislators are more prone to apply statutes of limitation to their domestic financial sector than to the international sector. Also, given that the transaction value is equivalent to the underlying

value of the target bank and thus reflects the bargaining power of the acquiring bank, it would be interesting to investigate whether there is a correlation between the performance of the acquiring bank and such variables as the number of international mergers and their transaction values.

Table 1  
The Top 10 Global Bank Mergers from 1997 to 2007 in Terms of Transaction Value

Date Announced	Target Name	Target Nation	Acquirer Name	Acquirer Nation	Value of Transaction (\$mil)	Target Total Assets (\$mil)
04/13/98	Bank of America Corp	US	NationsBank Corp, Charlotte, NC	US	61,633	260,159
01/14/04	Bank One Corp, Chicago, IL	US	JPMorgan Chase & Co	US	58,761	326,563
10/27/03	FleetBoston Financial Corp, MA	US	Bank of America Corp	US	49,261	196,398
10/13/99	Sakura Bank Ltd	Japan	Sumitomo Bank Ltd	Japan	45,494	399,862
02/18/05	UFJ Holdings Inc	Japan	Mitsubishi Tokyo Financial Grp	Japan	41,431	775,080
08/20/99	Dai-Ichi Kangyo Bank PLC	Japan	Fuji Bank Ltd	Japan	40,097	446,279
11/29/99	National Westminster Bank PLC	UK	Royal Bank of Scotland Group	UK	38,413	300,427
08/26/06	San Paolo IMI SpA	Italy	Banca Intesa SpA	Italy	37,624	343,570
06/30/05	MBNA Corp	US	Bank of America Corp	US	35,810	63,036
06/08/98	Wells Fargo Capital C	US	Norwest Corp, Minneapolis, MN	US	34,353	94,820
Accumulated transaction value					442,877	

Source: The Datamonitor Group

Overall merger and acquisition (M&A) activity in Asia, defined as the number of deals, experienced a significant boost after 1997. The only exception to this trend began in 2000-2001. Figure 3 shows that this increase was also noticeable in the transaction values, which peaked at over 130 million in 2000. This massive increase in the volume of M&A activity was due not only to the increase in the number of transactions, but also the increase in the average size of the transactions. A large proportion of the mergers were domestic, with percentages ranging from 68% to 78%. This trend resulted in a substantial concentration of markets at the national level during this period.

Table 2 shows the merger transactions in the Asian financial industry from 1997 to 2007, classified by target nation. As the deals were concentrated in North Asia, the Asia-Pacific region, Japan, and Southeast Asia, I have excluded all the deals involving target nations elsewhere. The majority of the transactions took place within the same industry. Even though this period has also seen the creation of banking conglomerates, insurance companies and securities firms, I have restricted the survey to transactions involving commercial banks and bank holding companies.

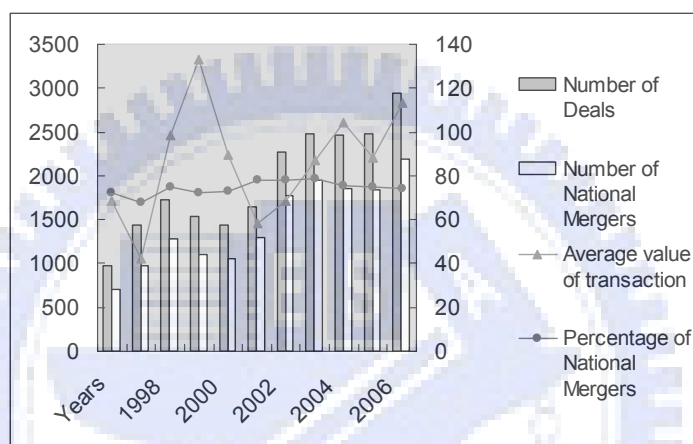


Figure 3 The Trend of Mergers in the Asian Financial Industry from 1997 to 2007

Source: SDC Platinum

Table 2

## Mergers Involving Asian Targets in the Financial Industry from 1997 to 2007

Area	Target Nation	Number of Deals	Number of Intra-Industry Mergers	Domestic Mergers	Target Industry : CB and BHC	Average Value of Transaction (US\$ mil)
North Asia	China	2742	1775	1820	94	48
	Hong Kong	3103	2297	2238	85	48
	South Korea	681	471	410	107	217
	Taiwan	487	410	322	98	212
Asia-Pacific	India	1267	1009	865	165	34
	Indonesia	475	401	184	107	42
Japan	Japan	2834	2158	2555	486	352
Central Asia	Kazakhstan	40	30	9	15	161
	Kyrgyzstan	9	7	0	4	29
Southeast Asia	Malaysia	3402	2197	3025	131	42
	Philippines	554	463	346	127	54
	Singapore	1076	728	718	30	94
	Thailand	907	753	591	163	34
	Vietnam	91	81	34	33	48
	Bangladesh	10	9	3	5	75
South Asia	Pakistan	72	72	30	18	120
	Sri Lanka	64	52	44	21	9
Total		17814	12913	13194	1689	

Note: That the financial industry sector is categorized by definition of SDC platinum includes (1) Commercial Banks and Bank Holding Companies (2) Savings and Loans, Mutual Savings Banks (3) Credit Institutions (4) Real Estate, Mortgage Bankers and Brokers (5) Investment and Commodity Firms / Dealers / Exchanges (6) Insurance (7) Other Finance.

There have been a large number of studies using event methodology to ascertain whether bank mergers create value. As most of these studies addressed events in the US and European banking systems, my goal in this paper was to evaluate the performance changes of Asian commercial bank mergers after the Asian financial crisis. First, I examined the announcement effect of the merger on banks that aimed to merge with other Asian commercial banks. I then identified variables related to the cumulative abnormal returns. Next, I analyzed the impact of the deals on accounting performance and economic evolution. In this part of the paper, I address the characteristics of the banks involved in

the mergers and the effect of the mergers on their balance sheets. There are several reasons for this choice. First, event studies can be performed only on a very small number of large banks. Second, I wanted to analyze the bank's performance over a long period of time and to investigate the sources of the changes following the merger. Third, whereas stock prices reflect expectations for operating performance and the changes in these expectations following the merger, I was interested in the actual changes. Finally, the paper addresses what characteristics of the deals affect subsequent performance of the acquiring banks.

The contributions of this paper lie in several areas. First, it looks at the wealth effects on the shareholders of the acquiring banks. Second, it examines the factors which are related to the market reactions. Third, it focuses on the post-merger performance of the acquiring banks and compares it with their performance three years before the merger. Finally, and most importantly, the paper shows to what extent the changes in performance were due to the transactions, and how long it took for these changes to occur.

The structure of the paper is as follows. Section 2 presents a literature review. Section 3 describes the test sample and the research methodology. The results of the research are presented in Section 4 and the conclusions in Section 5.

## **2. Literature Review**

### **2.1 Motives for bank M&As**

Often there are multiple factors that lead management to decide to merge with or acquire another firm. According to the reports of the European Central Bank in 2000, there are two sets of motives for M&As: those involving the firm itself and those related to external factors. There are three major external forces that create pressure for change in the financial industry and may help explain the recent increase in M&A activity: (a) deregulation, (b) technological advances, and (c) globalization of the market place. Globalization and liberalization not only lead to a rapid spread of technological advances

but also set in motion a wave of deregulation. Pressure from shareholders is an additional factor. Finally, macroeconomic conditions can have either direct or indirect effects on a bank's decision to engage in M&A.

The within-firm motives can be influenced by external factors such as laws and regulations, globalization, technological progress, and economic conditions. Many studies of global bank mergers have assumed that these mergers are driven by efficiency issues. Houston and Ryngaert (1994) point to gains in efficiency as the major source of value creation, even though the net increase in revenue generated from mergers tends to be small. However, Gary (2002) states that the merger wave has arisen because of macro-structural circumstances and that there are shifts over time in banks' strategic motives. Using Italian data, Focarelli et al. (2002), who treat acquisitions and mergers separately, found that mergers are intended to increase the income from services, whereas acquisitions are aimed at restructuring the loan portfolio of the acquired bank. For the present study, I did not distinguish between mergers and acquisitions, because I was not interested in the banks' different motivations and results. I focused, instead, on whether performance changed following the merger and, if so, how long the changes took to occur.

Maximizing profits for shareholders is another goal of M&As. Although the shareholders of acquired banks experience an increase in the values of their shares, the top executives of the acquired banks often lose their autonomy and must accept diminished job responsibilities; they may even be forced to terminate their employment. Thus, as noted by Hadlock et al. (1999), during merger negotiations bank managers may be forced to choose between the best interests of the shareholders (by accepting a maximum value for the takeover) and their own best interest (by maintaining their bank's independence). Bliss and Rosen (2001) examined the relationship between bank mergers and CEO compensation from 1986 to 1995. They found that the acquisitions significantly increased CEO compensation, even after the results of the typical announcement of the decline in the

stock price are taken into account. Numerous case studies have found that the shareholders of acquiring banks actually lost money because of the serious agency problem (e.g. Houston and Ryngaert, 1994).

The hubris hypothesis suggests that managers are overoptimistic in evaluating M&A opportunities because of excessive faith in their own predictive abilities (Roll, 1986). The data supporting this hypothesis reveal that there is an important human element in the process of deciding during a negotiation whether to proceed with the purchase of a company. The rapid opening up of the Asian financial industry attracted ambitious managers from all over the world, but conceited managers may have failed to take sufficient account of the profound culture shock and local government legislation involved in corporate takeovers. I will not consider further the agency problem and hubris hypothesis in this paper, because they both are inherent to the decision-making process. The focus is on the announcement rather than the effects of the agency problem and the hubris hypothesis.

The motives that drive mergers are generally considered to create a synergy that results in lower costs and higher profits. Geographical diversification, the improvement in the bank's competitive position, and the ability to increase sales by cross-selling products are the post-merger assets that the synergy creates. In this paper, I examine the effects of the synergy created by the merger activity, based on the assumption that the acquiring firm's financial performance significantly improves after the merger is announced and that this improvement is sustainable.

## 2.2 The performance of M&As

According to the efficiency market hypothesis (EMH), semi-strong form efficiency implies that stock prices adjust to publicly available new information very rapidly and in an unbiased fashion, such that no excess returns result from trading on that information.



Most of the literature evaluating the effects of M&As in the US and European financial industries has focused on the banking sector and used event methodology (see, e.g., Campa and Hernando, 2006; Scholtens and de Wit, 2004; Gayle and DeLong, 2003). Most empirical studies have found that the shareholders of the target company experience a substantial gain in abnormal returns from mergers but that shareholders of the acquiring company experience a loss in abnormal returns. Bert and Robert (2004) further found that these performance differences were more significant in the US than in Europe. Gayle and DeLong (2003) found comparable results in evaluating the value enhancement of the combined abnormal return rate. They found that non-U.S. *acquirers* earned greater abnormal returns than their U.S. counterparts, and that non-U.S. *targets* earned lower abnormal returns than their U.S. counterparts. For this study, the standard event study procedure was used to assess whether stock prices were consistent with semi-strong form efficiency market hypothesis following the announcement of a bank merger.

Another line of research has focused on evaluating expected post-merger improvement in performance. For example, Rose (1987) compared financial ratios such as return on assets (ROA), return on equity (ROE) and cost ratios. Examining 106 bank mergers between 1970 and 1985, she found that the acquirer's profitability did not increase post-merger. Pilloff (1996) found no significant change in post-merger ROE. However, when he used operating income instead of net income to calculate ROE, he found a significant increase in post-merger returns. Akhavein et al. (1997) found that, whereas there was no significant change in post-merger ROE between 1981 and 1989, there was a significant improvement in profit efficiency over that period. DeLong and DeYoung (2004) found that mergers increased long-term ROA and improved the efficiency ratio during the first years of their study, whereas, in the later years, whether the merger was international or whether payment was made in stock tended to have a greater effect on performance. Based on these data, we expected for the present study that the ROE of acquirers would

not significantly increase following a bank merger, and that the efficiency ratio would indicate improvement.

Studying the consequences of announcing a merger, Elijah, Julapa, and Thong (1996) used a sample consisting of all bank M&As from 1990 to mid-1998 to investigate the relations among target banks' bid premiums and profitability, asset size, financial leverage, and loan quality. They found that target banks with a high ROA and ROE were likely to be offered a large bid and that the correlation between target size and the effect of the merger announcement was positive. In the present study, I took such deal characteristics into account in considering the causes of the announcement effects.

### **3. Methodology**

#### **3.1 Sample selection**

The sample of bank mergers was obtained from the Thomson Financial Mergers and Acquisitions Database (SDC Platinum). Stock prices and financial statement data were taken from DataStream. To be included in the sample, a merger must have been announced between 1997 and 2007, because the focus of the study was on the bank mergers occurring after the Asian Financial Crisis. This was an excellent time for aggressive merger acquisitions because of the vast number of banks, with many branches, that were undervalued or in distress. Because I wanted to concentrate on mergers involving Asian commercial banks and eliminate unrepresentative samples, I included only transactions that had been completed at the time of the survey and for which targets in Asia were listed. By limiting both the acquirers and the targets to commercial banks and bank holding companies, I was able to assess the effects of a unique financial product market on performance.

I started with a sample of 989 bank mergers that met the above criteria. I reduced this initial sample to 413 (41.76%), including 155 acquirers, after omitting cases for one of the

following reasons:

- (1) The target was not located in one of the 12 Asian nations ranked highest in M&A frequency by preliminary observation: China, Honk Kong, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam.
- (2) Neither the stock prices nor the financial statements were available on DataStream.

### 3.2 Data description

As panel A of Table 3 shows, the sample came primarily from Japan and North Asia. Japan must be evaluated separately because it is relatively experienced with M&A and it is the only country in our sample that can be considered developed. The 112 deals (13.1%) from Japan account for the majority of the transactions in the sample, followed by 45 (5.26%) from Indonesia and 42 (4.91%) from China. The vast majority of these 262 (63.44%) transactions were national. The proportions of domestic mergers for Hong Kong, South Korea, Taiwan, India, Japan, Malaysia, Philippines, and Singapore are 50%, 63.33%, 67.74%, 87.18%, 37.78%, 95.54%, 75%, 63.64%, and 85.71%, respectively. The larger proportions of international mergers in Indonesia and Thailand may have resulted from the deregulation in their financial service industries after the Asian financial crisis. Note that the high proportions (92.86%) of international mergers in China because many acquirers in the deals are from Hong Kong, a special administrative region belong to China.

The average values for transactions and total assets of the targets varied significantly by region within their countries. The highest values are for Japan (US \$2,154 million for transactions; \$165 thousand million for assets), followed by Singapore (\$1,285 million for transactions) and China (\$155 thousand million for assets). Note that three of the top ten transaction values from 1997 to 2007 are for Japan.

Table 3  
Numbers and Values of Domestic and International M&A Transactions Classified by  
Country and Frequency

Area	Number of Deals	Target Nation	Number of Deals	Number of Domestic Mergers	Average Value of Transaction (\$mil)	Target Total Assets (\$mil)
<i>Panel A: Sorted by Country</i>						
North Asia	129 (31.23%)	China	42 (4.91%)	3 (7.14%)	357	155,452
		Hong Kong	26 (3.04%)	13 (50%)	374	17,289
		South Korea	30 (3.51%)	19 (63.33%)	775	32,694
		Taiwan	31 (3.63%)	21 (67.74%)	571	15,451
Asia-Pacific	84 (20.34%)	India	39 (4.56%)	34 (87.18%)	49	3,837
		Indonesia	45 (5.26%)	17 (37.78%)	96	2,882
Japan	112 (27.12%)	Japan	112 (13.1%)	107 (95.54%)	2,154	164,716
Southeast Asia	88 (21.31%)	Malaysia	16 (1.87%)	12 (75%)	363	10,890
		Philippines	33 (3.86%)	21 (63.64%)	132	2,571
		Singapore	7 (0.82%)	6 (85.71%)	1,285	37,483
		Thailand	22 (2.57%)	9 (40.91%)	110	4,739
		Vietnam	10 (1.17%)	0 (0%)	21	N/A
<b>Total</b>	<b>413</b>		<b>413(100%)</b>	<b>262(63.44%)</b>	<b>524</b>	<b>40,728</b>
	Number of Deals	Number of Domestic Mergers	Average Value of Domestic Mergers (\$mil)	Number of International Mergers	Average Value of International Mergers (\$mil)	Average Value of Transaction (\$mil)
<i>Panel B: Sorted by Frequency</i>						
1 time	80(9.37%)	67 (83.75%)	1,564	13 (16.25%)	233	1,379
2~4 times	190 (46%)	143 (75.26%)	1,359	47 (24.74%)	556	1,144
more than 5 times	143 (34.62%)	53 (37.06%)	622	90 (62.94%)	198	322
<b>Total</b>	<b>413 (100%)</b>	<b>263 (64%)</b>	<b>1,182</b>	<b>150 (36%)</b>	<b>329</b>	<b>948</b>

Note: The division of area in panel A is based on the sector from SDC Platinum and the figure is expressed as a percentage in parentheses. The left column in panel B shows the division of times of launching mergers by a specific acquirer from 1997 to 2007. Domestic Mergers is defined as the transaction involves two commercial banks or bank holding companies of the same country. International Mergers is defined as the transaction involves two commercial banks or bank holding companies of the different countries.

Panel B of Table 3 classifies the numbers and values of domestic and international mergers as a function of the number of transactions per year. The classification reveals that 80.62% of the transactions were initiated by an active acquirer. The most common frequency of mergers is 2-4 times from 1997 to 2007 (46%). Note that the average value of the merger for national mergers is always higher than for international mergers. The percentages of mergers that are domestic rather than international are 83.75% if 1 time, 75.26% if 2-4 times, and 37.06% if more than 5 times. Note that the deals announced by the more active acquirers (more than 5 per year) are most frequently international (62.94%) but have the smallest average value (322 millions). The international mergers are more complex than the domestic mergers because they involve two different regulatory environments, sets of customer expectations, and national cultures. We can assume that sophisticated acquirers can deal with these complexities smoothly.

Table 4 classifies the numbers and values of M&A transactions by region. Panel A reveals that the majority of the M&A deals (344) originated in Asia. The acquirers with the highest total assets are in the US and Canada (US \$93,278 million), followed by the UK (\$76,909 million) and Asia (\$66,641 million). The transactions with the highest average value were in Asia (\$959 million), which is five times higher than the European average (\$183 million). During the last decade, there has been an extensive financial integration in Asia. The other aggressive acquirers were from the US and Europe, where the financial industries are relatively mature and opportunities for organic growth are limited.

Panel B classifies the deals on the basis of transaction value. The vast majority of these transactions (314) are valued at less than \$100 million. Only in Hong Kong and Singapore are the majority of the transactions for less than 100 million. These relatively low Asian transaction values imply that, in Asia, financial integration through mergers is considered to be a bargain, especially in the countries whose banks have a relatively high proportion of non-performing loans.

Table 4

## Numbers and Values of M&amp;A Transactions Classified by Acquirer Nation and Transaction Value

	Number of Deals	Average Value of Transaction (\$mil)	Target Total Assets (\$mil)
<i>Panel A: Sorted by Acquirer Nation</i>			
US & Canada	26 (6.30%)	576.42	93,227.60
UK	19 (4.60%)	696.53	76,908.78
European	20 (4.84%)	183.11	42,641.11
other areas	4 (0.97%)	464.85	52,446.70
Asia	344 (83.29%)	959.05	67,983.85
<b>Total</b>	<b>413 (100%)</b>	<b>575.99</b>	<b>66,641.61</b>
	Target Nation	Number of Deals ≤100 \$mil.	Number of Deals >100 \$mil.
<i>Panel B: Sorted by Transaction Value</i>			
North Asia	China	32 (76.19%)	10 (23.81%)
	Hong Kong	12 (46.15%)	14 (53.85%)
	South Korea	19 (63.33%)	11 (36.67%)
	Taiwan	22 (70.97%)	9 (29.03%)
Asia-Pacific	India	38 (97.44%)	1 (2.56%)
	Indonesia	43 (95.56%)	2 (4.44%)
Japan	Japan	80 (71.43%)	32 (28.57%)
Southeast Asia	Malaysia	9 (56.25%)	7 (43.75%)
	Philippines	30 (90.91%)	3 (9.09%)
	Singapore	2 (28.57%)	5 (71.43%)
	Thailand	17 (77.27%)	5 (22.73%)
	Vietnam	10 (100%)	0 (0%)
<b>Total</b>		<b>314 (76.03%)</b>	<b>99 (23.97%)</b>

Note: The division of area is based on the sector from SDC Platinum and the figure is expressed as a percentage in parentheses.

### 3.3 Hypotheses

Several studies show that the market reaction at the time of a merger announcement tends to be either neutral or slightly negative. These studies also reveal that these market reactions depend on the characteristics of the deal such as domestic mergers, relative size, and type of payments. As a result, for this study I assumed that the mergers had a negative

effect on the wealth of the acquirers' shareholders and disconfirmation of the semi-strong form efficiency hypothesis. Mergers in which the companies engage in similar activities and are close geographically produce the highest returns to the stockholders (DeLong, 2001); hence, negative abnormal returns are rare in domestic mergers. Given that the acquisition of a large target is more complex than that of a small target, and thus value creation more difficult, international mergers with large transaction values require sophisticated investor protection laws. Also, the effects of the announcement must be trivial. If the acquirer is proficient, the M&A process should run smoothly and efficiently.

Second, most of the numerous studies on post-merger performance have found no significant improvement in post-merger ROE but positive reactions to the profit and efficiency ratios. Therefore, we expected the mergers to result in improved profitability and efficiency. On the other hand, because of synergy, we expected liquidity, risk, and the lending intensity to decrease.

Finally, we evaluated the factors that affected post-merger performance in our sample and how long it took for the changes in performance, if any, to occur. We hypothesized that it took no longer than five years after the announcement for the changes in post-merger performance to become significant and that these changes were influenced by the Asian Financial Crisis (see Campa and Hernando, 2006; DeLong and DeYoung, 2004).

### 3.4 Methodology

For our analysis, the announcement effects of acquirers are assumed to be negative and the semi-strong form efficiency is supposed to be violated. First, we decided to apply our event study method to the circumstances on the announcement date of the merger. Then a regression model was employed to evaluate whether the effects of the announcement are related to such factors as merger type, transaction value, frequency of mergers, and the relative total assets of the target and acquiring banks. We then performed

paired two-sample t-tests to compare the accounting practices and changing economic circumstances of the banks to their performance before and after the transaction. Finally, we performed a regression analysis to assess the impact of the merger on a set of performance variables: profitability, liquidity, efficiency, risk profile, and lending intensity. We expected these post-merger performance changes to be attributable to synergy.

The event study method was used to determine whether the merger announcement had any effect on stock prices. In order to analyze the effect on stock prices in the bank merger sample, a period from 121 to 21 days before the merger announcement is defined as the estimated period. The semi-strong market efficiency hypothesis implies stock prices will be affected by the announcement. Hence, the logical choice for the event window is the day of the announcement. However, following standard practice, the window was defined as a 3-day period consisting of the announcement date and the days immediately preceding and following it. To evaluate whether information about the merger might have been leaked to the market in advance of the announcement, we performed a supplementary analysis for the 5-day period centred on the announcement date. To put it another way, we analyzed the abnormal returns to the acquirer -1 to +1 days and -2 to +2 days before and after the merger announcement. The abnormal returns were defined as the difference between the total shareholder return of the acquiring company during the event window minus the expected return during that period. The expected return during the window period was calculated using the market model and the MSCI AC ASIA index was used to measure the market return.

After determining whether the abnormal return was significant, we focused on the characteristics that might affect the cumulative abnormal returns. Given that we planned to evaluate financial performance post-merger, we restricted our analyses to the 213 completed deals. We estimated the regression weights as follows:



$$\begin{aligned}
CAR_{(t_1, t_2)} = & \alpha + \beta_1 X_{1,i} (\text{Frequency of Merger}) + \beta_2 X_{2,i} (\text{Value of Transaction}) \\
& + \beta_3 X_{3,i} (\text{Domestic Merger}) + \beta_4 X_{4,i} (\text{Relative Assets}) \\
& + \beta_5 X_{5,i} (\text{Operating Efficiency}) \\
& + \beta_6 X_{6,i} (\text{Total Interest Expenses/Interest Bearing Liability}) \\
& + \beta_7 X_{7,i} (\text{Frequency of Merger} * \text{Value of Transaction}) \\
& + \beta_8 X_{8,i} (\text{Frequency of Merger} * \text{Domestic Merger}) \\
& + \beta_9 X_{9,i} (\text{Domestic Merger} * \text{Value of Transaction}) + \varepsilon_i
\end{aligned}$$

Where

$X_1$  (Frequency of merger) = 1, if the frequency of merger is 1 - 4

$X_2$  (Value of Transaction) =  $\log$  (Transaction Value)

$X_3$  (Domestic merger) = 1, if the merging banks are from the same country.

$X_4$  (Relative Assets) =  $\frac{\text{Total Assets}_{\text{Target}}}{\text{Total Assets}_{\text{Acquirer}}}$

$X_5$  (Operating Efficiency) =  $\frac{\text{Total Assets}_{\text{Acquirer}}}{\text{Employees}_{\text{Acquirer}}}$

$X_6$  (Total Interest Expenses/Interest Bearing Liability) =  $\frac{\text{Total Interest Expenses}_{\text{Acquirer}}}{(\text{Deposits} + \text{Debts})_{\text{Acquirer}}}$

$X_7 - X_9$  represent the interaction term, respectively.

As the third step, paired two sample t-tests were used to determine if the acquirers' operating performance improved after the merger.

Table 5 reports descriptive statistics and the expected effects of the merger announcements on the financial ratios for acquiring banks. The table shows that the announcements affected the ratios in different ways. Operating profits and pretax margins increased slightly in the three years post-merger; however, the post-merger effect of the announcements on ROE is consistent with the pre-merger expectation of no significant improvement. As Campa and Hernando (2006) claim, neither acquirers' ROEs nor financial margins consistently increased after a merger.

On average, the acquiring banks exhibited greater liquidity, defined as deposits divided by loans, and net loans divided by total capital. The larger the deposit-to-loan ratio, the less a bank is relying on borrowed funds, which are generally more costly than other

types of deposits. However, an excessive deposit-to-loan ratio implies a negative effect on profitability.

Table 5  
Descriptive Statistics for the Financial Ratios of Acquirer Banks

Indicator	Variable	Expected Sign	Mean		Median	
			[-3,-1]	[+1,+3]	[-3,-1]	[+1,+3]
Profitability	ROE (%)	*	6.7	6.17	8.65	8.43
	Operating Profit Margin (%)	+	11.19	12.42	13.81	15.99
	Pretax Margin (%)	+	9.41	11.32	12.36	15.25
	Total Interest Expenses / Interest Bearing Liabilities (%)	-	5.82	4.56	2.05	1.04
	Deposits / Loans	*	1.1	1.15	1.08	1.1
Liquidity	Net Loans / Total Capital	-	7.21	6.2	6.45	5.37
Efficiency	Operation Expenses / Sales	-	0.88	0.86	0.86	0.83
	Assets Per Employees	+	495,380	566,410	69,874	97,162
Risk	Loan Loss Provisions / Total Loans	*	0.01	0.01	0.01	0.01
	Loan Loss Provisions / Interest Revenues	*	0.15	0.14	0.1	0.09
	Total Debt/Total Capital	-	1.17	1.02	0.98	0.91
	Net Loans / Total Assets	*	0.65	0.62	0.67	0.64

Note: The signal “\*” indicated that the expected sign is uncertainty based on literature reviews. The signal “+” (“-”) indicated that there is a positive (negative) post-merger effect on the variables. The event windows [-3,-1] and [+1, +3] indicate that the average financial ratios during a period from -3 to -1 and +1 to +3 years to the merger announcement.

Acquirers’ risk-profile ratios and efficiency ratios also improved after merger announcements. Ideally, merging with another bank is not only a faster way for managers to increase revenues than making investments internally, but it is typically less risky. In terms of efficiency, the rationale for engaging in a bank merger is to achieve economy of scale and save costs by eliminating overlapping operations and consolidating backroom operations. However, Altunbas and Marqués (2004) claim that the improvement in

efficiency may risk being less successful than anticipated, owing to the complexity of the operation. Moreover, acquirers display a slightly weak lending intensity if the post-merger ratio of loans to total assets is low.

To further elucidate the effects of merger announcements on financial ratios, regression analyses were performed on the variables which were significant in the paired two-sample t-tests. The regressions were intended to determine the extent to which the observed changes in performance were due to the announcement, and how long it took for these changes to occur. Two dummy variables were added to represent the number of years after the effective date of the deal. The coefficients of these dummy variables reflect the time profile of the impact of the announcement on post-merger performance. Dummy variables were also added for the effects of the Asian Financial Crisis, the number of mergers that were international, and the relative assets of the merging partners. The coefficients of these dummy variables reflect the average post-merger performances of the merging banks. We used the following model for the regressions:

$$\begin{aligned} \text{Financial Ratio}_{it} = & \alpha + \beta_1 X_{1,it} (\text{Dummy}_1) + \beta_2 X_{2,it} (\text{Dummy}_2) \\ & + \beta_3 X_{3it} (\text{Downturn}) + \beta_4 X_{4,it} (\text{Domestic Mergers}) \\ & + \beta_5 X_{5it} (\text{Relative Assets}) + \varepsilon_i \end{aligned}$$

Where  $X_{1,it} (\text{Dummy}_1) = 1$ , if the value of observations referring to the 1 - 3 years.

$X_{2,it} (\text{Dummy}_2) = 1$ , if the value of observations referring to the 4 - 5 years.

$X_{3,it} (\text{Downturn}) = 1$ , if the years 1997 and 1998 account for the Asian Financial Crisis.

$X_{4,it} (\text{Domestic Mergers}) = 1$ , if the merging banks are from the same country.

$X_{5,it} (\text{Relative Assets}) = \text{Total Assets}_{\text{Target}} / \text{Total Assets}_{\text{Acquirer}}$

## 4. Empirical Results and Analysis

### 4.1 Cumulative abnormal returns

In this section, I present how bank performance was affected by the bank merger announcement. Figure 4 shows the cumulative average abnormal returns of acquiring banks before, during, and after the merger announcement period. The market prices of the

acquirers' shares reacted rapidly to the merger announcement during the announcement period, and there was a negative abnormal returns during this period. During the 5 days after the announcement, the average abnormal returns were less than during the 5 days before the announcement. Thus, the acquiring banks experienced a negative excess return around the time of the announcement. The excess return on average was -0.4428% from the period 5 days prior to the merger announcement to the 5 days after the announcement. The average abnormal returns are -0.2389% across the smaller window [-1, +1] and -0.2958% across the larger window [-2, +2].

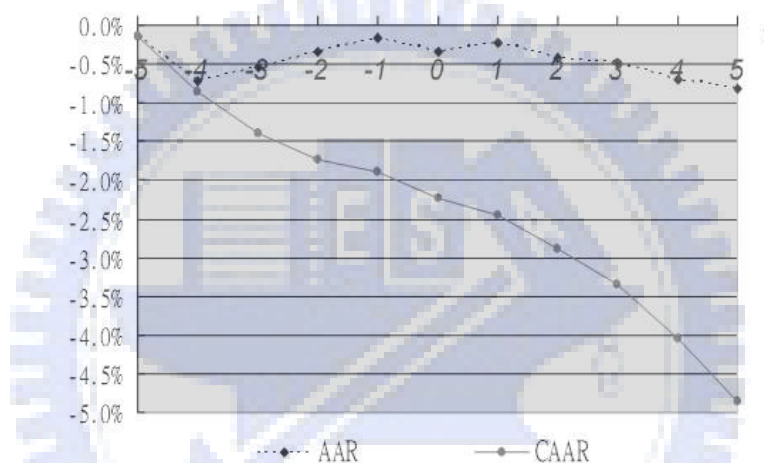


Figure 4 Cumulative Average Abnormal Returns for Acquiring Banks

These declines in abnormal returns are evident in Table 6. I assumed that the returns 2 days before the announcement would be a good indicator of market efficiency, because information leaks would result in prompt price reactions. The cumulative abnormal return in the event windows [-1, +1] and [-2, +2] are -0.72% and -1.48%, respectively. As the distribution of the average abnormal returns is quite symmetrical, I used t-tests to determine whether these changes are significantly different from zero. Table 6 shows the results of these tests and the corresponding p-values. The mean change in the average abnormal returns from 5 days before the announcement to 5 days after the announcement is negative and highly significant. However, there is little change from 1 day before to 1 day after the announcement. In short, the announcements of Asian commercial bank

mergers consistently yield declines in cumulative abnormal returns. This result is in line with the results of all the other studies on bank mergers previously mentioned.

As a robustness test, I supplemented the t-tests with sign tests, as suggested in Corrado (1989). The results show that all the changes in the abnormal returns are still statistically significant at the 1% level, even though the use of non-parametric statistics decreases sensitivity to outliers.

Table 6  
Abnormal Returns and Cumulative Abnormal Returns

	Rate of Return	Positive	Negative	t-Test	Sign Test
AAR-2	-0.34%	145	233	-2.0144***	-4.4748***
AAR-1	-0.16%	143	235	-0.967	-4.6805***
AAR0	-0.34%	143	235	-2.028***	-4.6805***
AAR+1	-0.22%	141	237	-1.304	-4.8863***
AAR+2	-0.43%	134	244	-2.56***	-5.6064***
CAR[-1,+1]	-0.72%	136	242	-7.9275***	-5.4006***
CAR[-2,+2]	-1.48%	110	268	-13.9770***	-8.0752***

Note: The sample consists of 378 acquiring Asian commercial bank between 1997 and 2007. All banks are publicly traded. Abnormal returns were calculated against the MSCI AC ASIA index using market model regressions averaged over each event window. The null hypothesis on which the test of statistical significance is based is that the changes in the returns across the window are zero. \*\*\* Statistically significant at the 1% level.

#### 4.2 Multivariate results

In order to identify some of the factors that influence value creation, I next performed a regression analysis of the cumulative abnormal returns over a set of frequency dummies, a set of country dummies, and a set of variables indicating key characteristics of each transaction. The variables presented before were also included in the regression model to increase its explanatory power.

A backward selection procedure for entering variables into the model was employed. Specifically, control variables related to the cumulative abnormal returns were entered first. The final factors determined by this procedure are the ratios of total assets to number of employees and total interest expenses to interest-bearing liabilities.

As for the dummy variables, Frequency of Mergers took a value of 1 if the frequency was 1-4 per year; Domestic Mergers took a value of 1 if the transaction involved two commercial banks in the same country. Value of Transaction was defined as the logarithm of the value in US dollars. Finally, Relative Assets is the ratio of the total assets of the target and acquiring banks before the merger.

Table 7  
Regression Analysis of Cumulative Abnormal Returns

	CAR[-2,+2]	CAR[-1,+1]	CAR[-2,+2]	CAR[-1,+1]	CAR[-2,+2]	CAR[-1,+1]
Constant	-1.877 (2.07)	-0.517 (1.992)	-1.738 (2.30)	-0.098 (2.2049)	-3.283 (2.063)	-1.935 (1.8785)
Frequency of Mergers	-1.877 (2.058)	-0.439 (1.98)	-0.951 (2.73)	-2.695 (2.6168)	-1.030 (2.3659)	-2.712 (2.1538)
Value of Transaction	-1.877 (0.366)	0.168 (0.35)	0.296 (0.418)	0.204 (0.401)	0.225 (0.3652)	0.147 (0.3325)
Domestic Mergers	-1.997 (1.981)	-1.1181 (1.906)	-1.06556 (3.83)	-3.870 (3.67)	1.081 (3.3286)	-1.557 (3.0303)
Relative Assets	-0.010 (0.011)	-0.010 (0.011)	-0.017 (0.013)	-0.015 (0.012)	-0.017 (0.012)	-0.014 (0.01)
Frequency*Value			0.00326 (0.0032)	0.0026 (0.0031)	0.004 (0.0028)	0.004 (0.0025)
Frequency*Domestic			-0.0438 (4.47)	4.83654 (4.28)	-7.130E-03 (3.87)	4.754 (3.5253)
Domestic*Value			-0.0033 (0.0032)	-0.00272 (0.0031)	-4.33E-03 (0.0028)	-3.8E-03 (0.0025)
Total assets / Employees					-2.16E-07 (1.547E-7)	-1.76E-07 (1.41-7)
Total Interest Expenses/ Interest Bearing Liabilities					0.5061** (0.091)	0.553* (0.083)
Observations	101	101	101	101	101	101
R-squared	0.0269	0.0168	0.0389	0.0381	0.2993	0.3661
Adj. R-squared	-0.0137	-0.0242	0.0389	-0.0344	0.23	0.3034

Note: The dependent variable are estimated excess returns around the announcement of the transaction relative to the performance of the MSCI AC ASIA index, over the window in days indicated in the top of the column. A dummy Frequency of Merger that takes value of 1 if the frequency of merger is 1-4, a dummy Domestic Merger that takes value of 1 if the transaction involves two commercial banks of the same country, a variable that take the logarithm of dollar value of the bank merger transaction Value of Transaction, and Relative Assets is defined as (total assets of target to total assets of acquirer ratio). \*\*Statistically significant at the 5% levels. Standard errors are reported in parentheses.

Table 7 shows the results of the least squares regression of the effect of the above deal characteristics and the control variables on acquirers' 5-day and 3-day cumulative abnormal returns.

These results are consistent with the previous literature suggesting that the location of the merger partners has no significant impact on the returns to the acquirers' stockholders. However, the results for relative assets do not support the hypothesis that because the acquisition of small targets is less complex than the acquisition of large targets, value creation might be less difficult. It was also found that larger transaction values resulted in higher cumulative abnormal returns for acquiring banks than did smaller transaction values, and that the acquiring banks that made the fewest merger deals had the lowest cumulative abnormal returns. However, neither of these differences is statistically significant.

The regression results also reveal that profitability as measured by total interest expenses divided by interest-bearing liabilities has a significant impact on the returns. The negative coefficient of the interaction term Domestic\*Value implies that the impact on cumulative abnormal returns depends on both the transaction value and the location of mergers. International mergers and deals with larger transaction values jointly yield the lowest cumulative abnormal returns. This result can be explained with reference to the negative relationship between the degree of investor protection in the target country and the abnormal returns that the acquirers' stockholders realize during the announcement period. International mergers with large transaction values require more sophisticated investor protection laws.

#### 4.3 Effects of Asian commercial bank mergers on bank performance

This section compares the financial performance of the banks pre-merger and post-merger. Panel A of Table 8 displays the results of the paired two-sample t-tests. Overall, the mergers resulted in modest improvements in liquidity, efficiency, and risks for

the acquiring banks. It also caused a slight drop in lending frequency and profitability.

Although the results indicate acquirers' profitability improved, except for ROE, the modest increases in operating profit margin and pre-tax margin, as well as the decrease in ROE, are not statistically significant. These findings accord with the results of Campa and Hernando (2006). The fact that the ratio of total interest expenses to interest-bearing liabilities decreases implies a decrease in the average interest rate and the interest-bearing, but not an obvious improvement in profitability. The slight increase in the deposit-to-loan ratio implies that although there is a negative effect on profitability, there is no liquidity shortage. However, the loan-to-capital ratio appears to decline, because the acquiring banks cannot increase their presence in the lending market until 3 years after the merger announcement. The risk profile of the acquiring banks suggests a mild decrease in the risks assumed by the banks; the lower the ratio of total debt to total capital, the better the bank's long-term solvency.

There were significant post-merger improvements in some financial ratios for the acquiring banks. An additional least squares regression analysis was performed to determine whether these changes in performance were due to the transactions and, if there were changes, how many years it took for the changes to occur. The regression results reflecting the effect of the relevant deal characteristics on the financial ratios is reported in Panel B of Table 8.

The estimated ratio of loan loss provisions to total loans decreases on the order of 1-2% and becomes statistically significant 4-5 years after the announcement of the deal. The statistically significant in constant term implies that the absolute values of these performance changes are greatest 5 years after the announcement.

The effect of the merger announcement on the ratio of loan loss provisions to total loans is greater if the deal took place during the Asian Financial Crisis. Note that the effects of the crisis were found for all variables except the ratio of net loans to total assets



and the ratio of total interest expenses to interest-bearing liabilities ratio. This means that the decreases in these ratios result from the failure to increase presence in the lending market and increase the savings in interest costs. All the variables have a more statistically significant impact if the deals were domestic rather than international. Merger announcements were found to have no impact on the financial ratios related to relative assets. This latter result is consistent with previous research.



Table 8  
Effects on the Performance of Acquirers

*Panel A: Paired Two Samples T-test*

Indicator	Variables	t (p-value)
Profitability	ROE	0.4132 (0.6798)
	Operating Profit Margin	-0.7914 (0.4293)
	Pretax Margin	-1.1494 (0.2513)
	Total Interest Expenses/Interest Bearing Liabilities	2.4753 (0.0139***)
Liquidity	Deposits / Loans	-2.636 (0.0088***)
	Net Loans / Total Capital	8.9774 (0.0000***)
Efficiency	Operation Expenses / Sales	0.9511 (0.3423)
	Assets Per Employees	-2.9231 (0.0037***)
Risk	Loan Loss Provisions / Total Loans	-0.2992 (0.7650)
	Loan Loss Provisions / Interest Revenues	0.5314 (0.5955)
	Total Debts/Total Capital	4.5202 (0.0000***)
Lending Intensity	Net Loans / Total Assets	3.589 (0.0004***)

*Panel B: Evolution of ex-post acquirer performance*

	Total Interest Expenses / Interest Bearing Liabilities	Deposits /Loans	Net Loans /Total Capital	Net Loans / Total Assets	Assets Per Employees	Loan Loss Provisions / Total Loans	Total Debts/ Total Capital
Constant	2.09 (0.00)***	0.97 (0.00)***	4.78 (0.00)***	0.62 (0.00)***	253131 (0.03)***	0.01 (0.00)***	1.67 (0.00)***
Dummy (1-3)	-0.11 (0.79)	-0.01 (0.70)	0.01 (0.7)	-0.01 (0.34)	-1060681 (0.51)	0.00 (0.18)	-0.07 (0.32)
Dummy (4-5)	-0.61 (0.28)	-0.04 (0.35)	0.19 (0.35)	-0.01 (0.57)	367538 (0.11)	-0.019 (0.00)***	0.04 (0.69)
Downturn	-0.01 (0.98)	0.31 (0.00)***	-0.59 (0.00)***	-0.01 (0.60)	476420 (0.05)*	0.02 (0.00)***	0.25 (0.02)**
Domestic Mergers	-1.24 (0.00)***	0.28 (0.00)***	2.75 (0.00)***	0.02 (0.00)***	1359348 (0.00)***	0.01 (0.00)***	-0.9 (0.00)***
Relative Assets	0.00 (0.31)	0.00 (0.64)	0.00 (0.64)	0.00 (0.19)	168.61 (0.59)	0.00 (0.78)	0.00 (0.49)

Note: The dependent variable in each column the annual performance ratio indicated at the top of the column. Dummy (i-j) are dummies variable that take value of 1 if the observations referring to the i-j years after the merger announcement. Downturn is a dummy that takes the value of 1 if the years 1997 and 1998 to account for the Asian Financial Crisis. Domestic Merger is a dummy variable that takes the value of 1 if the merging banks are from the same country. Relative Assets is defined as (total assets of target to total assets of acquirer ratio). \*, \*\*, \*\*\* Statistically significant at the 10%, 5%, and 1% levels, respectively. The p-value of the null hypothesis that the difference between means in the 3 years prior to announcement and 3years after the announcement is zero in panel A and p-value of the null hypothesis that the coefficient of the independent variable is zero in panel B are reported in parentheses.

#### 4.4 Do the bank mergers contribute to the economic growth?

The financial system is always seemed to play a critical role in economic growth. The well-functioning banks spur technological innovation by identifying and funding the entrepreneurs with the best chances of successfully implementing innovative products and production processes. According to this view, economic development creates demands for particular types of financial arrangements, and the financial system responds automatically to these demands. In this section, we want to see if the merger deals in financial industry contribute to the economic growth by observing the relations between the number of mergers in financial industry and both the return of stock price index and real GDP growth rate. Table 9 displays the results of the return of stock price index and real GDP growth rate of target nations. It reveals great improvements both in return of stock price index in China, South Korea, Japan, Singapore, and Thailand and real GDP growth rate in China, India, and Malaysia during 2 years after the bank merger announcement. This link between the bank mergers and economic growth would be a interesting issue which could be further discussed.

Table 9

## Descriptive Statistics for the Returns of Stock Price Index and Real GDP Growth Rate of Target Nations

Target Nation	Number of Mergers in Financial Industry	Return of Stock Price Index (%)		Real GDP Growth Rate (%)	
		[-2,-1]	[+1,+2]	[-2,-1]	[+1,+2]
China	1775	1.59	32.17	9.19	33.09
Hong Kong	2297	7.25	6.80	4.50	4.93
South Korea	471	-11.99	-1.73	3.72	3.40
Taiwan	410	12.37	12.86	5.56	4.44
India	1009	19.08	17.35	5.56	7.33
Indonesia	401	5.11	1.65	3.89	3.34
Japan	2158	7.99	15.45	4.72	4.34
Malaysia	2197	33.20	31.75	4.66	5.03
Philippines	463	3.03	-0.95	4.66	4.09
Singapore	728	4.54	19.86	5.39	5.23
Thailand	753	-12.78	21.49	-0.28	N/A
Vietnam	81	N/A	-64.07	N/A	N/A

Note: The event windows [-2,-1] and [+1, +2] indicate that the average return during a period from -2 to -1 and +1 to +2 years to the merger announcement.

## 5. Conclusions

Asian financial integration has been a topic of industry discussion since the rise of the Asian economies. The question now is whether entering the Asian financial market through mergers represents a substantial qualitative change for the acquiring banks. Financial integration in Asia has evolved dramatically during the last decade, the rate depending on the particular segment of the financial industry. The evolution of the commercial banking industry is especially interesting because of the key role this sector plays in financial intermediation in Asian countries.

This paper has examined M&A activity in the commercial banking industry during the period 1997-2007. We used the event study to explore the effects of announcing bank mergers. These effects were studied in a sample of bank mergers with Asian targets. Paired two-sample t-tests were used to examine whether the announcements led to performance

changes. A regression model was then used to analyze the characteristics of these changes.

We found that the acquiring banks experienced strong declines in abnormal returns. This finding is consistent with the results of previous research. Previous studies of banks in Europe and the US have found that the acquiring banks on averaged experienced declining abnormal returns from their mergers (see, for example, Campa and Hernando, 2006, and DeLong, 2003). Their findings also reveal that such characteristics as the experience of the acquirer with mergers, the value of the transaction, the relative pre-merger assets of the acquirer and target, whether the merger was domestic or international, and the interactions among these variables were not statistically related to the stock market returns.

In our study, the acquiring banks showed improvements in their liquidity, risk profiles, and post-merger efficiency, but a slight decline in their lending intensity. As for operating performance, although the banks could not increase their market share by increasing their net loans, their increased efficiency resulted in performance improvement. However, no link was found between the increase in efficiency and greater profitability. Because financial integration did not result in statistically significant operating cost savings, we must conclude that the improvement was in physical equipment rather than management personnel. However, this improvement did not manifest until 5 years after the merger, and it was greatly affected by the Asian Financial Crisis. The relation between bank mergers and economic growth would be an issue deserving of further study.

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