

Bidders, rivals, and wealth creation of the banking market consolidation process in the Asia-Pacific region

Sascha Kolaric^{a*}, Dirk Schiereck^a

^a Department of Business Administration, Economics and Law, Technische Universität Darmstadt, 64289 Darmstadt, Germany

Abstract

We analyze the shareholder wealth implications of the financial sector consolidation in the Asia-Pacific region between 1995 and 2013. The results suggest that market power potentials play a prominent role when capital markets value M&As between Asian financial institutions. Asian bidders earn highly significant positive returns, while their non-Asian peers achieve insignificant wealth effects. The rivals of Asian bidders profit from further consolidation, particularly on the national level, suggesting that market power considerations are potentially a dominant motivation behind these mergers.

JEL classification: G14, G21, G34, F23

Keywords: Mergers and acquisitions (M&A) · Banks · Emerging markets · Rival reactions · Event study · Market power

* Corresponding author:

Sascha Kolaric

E-mail address: kolaric@bwl.tu-darmstadt.de

Phone number: +49 6151 1670986

Address: Department of Business Administration, Economics and Law, Technische Universität Darmstadt, Hochschulstrasse 1, 64289 Darmstadt, Germany

Bidders, rivals, and wealth creation of the banking market consolidation process in the Asia-Pacific region

Abstract

We analyze the shareholder wealth implications of the financial sector consolidation in the Asia-Pacific region between 1995 and 2013. The results suggest that market power potentials play a prominent role when capital markets value M&As between Asian financial institutions. Asian bidders earn highly significant positive returns, while their non-Asian peers achieve insignificant wealth effects. The rivals of Asian bidders profit from further consolidation, particularly on the national level, suggesting that market power considerations are potentially a dominant motivation behind these mergers.

JEL classification: G14, G21, G34, F23

Keywords: Mergers and acquisitions (M&A) · Banks · Emerging markets · Rival reactions · Event study · Market power

1. INTRODUCTION

The worldwide trend towards further consolidation in the financial sector has continued almost unabated. However, the motivations and reasons behind this trend are still controversially discussed and show regional differences. While the concentration of banking assets in the developed economies is mainly driven by synergetic motives in the emerging economies potential market power considerations may also play a prominent role. Research on acquisitions in the well-developed financial markets of the US and Europe provide evidence that synergy potentials mainly benefit the target banks, as they earn significant positive returns, while the bidding banks are likely to realize non-significant or even slightly negative returns (see e.g. Beitel, Schiereck, & Wahrenburg, 2004; DeLong, 2001; Hankir, Rauch, & Ueber, 2011). The results of Campa and Hernando (2004) indicate that particularly cross-border M&A transactions in heavily regulated industries, especially the financial sector, lead to a destruction of shareholder wealth. In contrast, a combination of geographic and product focus appears to achieve better results for the bidding bank, in the US (DeLong, 2001) as well as Europe (Beitel et al., 2004).

However, the results for the developed economies of Europe and the US may not hold for emerging markets. Emerging economies, especially in Asia, have been the growth engine of the world economy for some time now. Regional financial hubs, such as Hong Kong and Singapore, continuously gain in global importance, while Tokyo is still one of the major financial centers in the world, even though the Japanese economy has been struggling for more than two decades now. Furthermore, increasing harmonization of international financial markets, for example through the Basel Accords, ought to make it easier for international banks to engage in cross-border M&A transactions, as increased transparency requirements allow bidders to more easily evaluate the financial strength of potential targets. Yet, research on bank mergers in emerging markets is still scarce and the results so far suggest that there may be differences to US and European M&As. This is supported by Kiyamaz (2004), who documents that US bidders engaging in acquisitions in Latin America enhance their shareholder value, while the results for Asia are not as clear. Kiyamaz (2004), as well as Goddard, Molyneux, and Zhou (2012), only report non-significant returns to bidding banks for mergers in Asia.

Moreover, very few studies exist with regard to the industry wide wealth effects of M&As, particularly for the financial sector. This is surprising, as important corporate events, and M&As in particular, have the potential to alter the competitive structure of an entire industry and are therefore likely to affect the rivals of the merging institutions as well. Research on the rival effects of M&As so far predominantly suggests that M&As lead to positive wealth effects for rivals (e.g. Eckbo, 1985; Song & Walkling, 2000). The study by Hankir et al. (2011) is the only one to offer a comprehensive analysis on the impact of US and European bank mergers on the wealth effects of rival institutions. Their

results strongly suggest that market power considerations play an important role when market participants evaluate bank mergers. In particular, the observed return patterns are significantly related to intra-industry mergers and increasing market concentration, suggesting that mergers among financial institutions resulted in decreased levels of competition.

The present article is the first one to offer a comprehensive analysis on the wealth effects of the financial sector consolidation in the Asia-Pacific region. It examines whether Asian banks are able to reap higher benefits from this process than their non-Asian peers. This is achieved by not only investigating the shareholder wealth effects of the institutions directly involved in the merger, but also their closest rivals. In this way, it is possible to arrive at clear conclusions as to whether international banks are able to overcome the differences in language and corporate culture associated with acquisitions in the Asia-Pacific region and to profit from the potential growth opportunities in the region. At the same time, it is possible to investigate whether motives, such as market power considerations, play a role when capital markets value mergers of Asian financial institutions within the region.

The rest of the paper is structured as follows: Section 2 provides an overview of the extant literature on the shareholder wealth effects of bank mergers and acquisitions, divided into evidence from advanced and emerging economies. In addition, it highlights the prior research on the wealth effects of M&As on a firm's rivals. Section 3 reports the sample selection process and presents descriptive statistics. In addition, the econometric modelling of the event study is explained in more detail. Section 4 documents the results of the short-term shareholder wealth effects for bidding and target banks and their closest rivals. Section 5 uses a cross-sectional regression analysis to identify the key drivers behind the capital market performance of bidding banks and their rivals. Section 6 presents multiple robustness tests to the results. Section 7 concludes the article.

2. RELATED LITERATURE AND HYPOTHESES GENERATION

2.1 Wealth effects of M&As among financial institutions

The focus of empirical research on mergers and acquisitions among financial institutions lies largely on the advanced economies of the US and Europe. Especially the shareholder wealth effects of the acquiring and target institutions are frequently investigated in order to examine which factors influence the success or failure of such transactions.¹ In general, most studies find that the acquiring institution earns slightly negative stock returns, in many cases at least weakly significant. Targets, on the other hand, earn large, positive, and statistically significant returns. The combined institution of target and acquirer frequently earns slightly positive returns as well.

¹ Comprehensive reviews of the literature on bank mergers and acquisitions are given by DeYoung, Evanoff, and Molyneux (2009) and Kolaric and Schiereck (2014).

Becher (2000) shows that the shareholders of bidding banks in the US achieve highly significant negative returns during the eleven days surrounding the official announcements day. Targets, on the other hand, earn highly significant positive returns. The combined institution also earns positive abnormal returns, indicating that the overall wealth effect was positive and hence that M&As do not merely constitute a wealth transfer from bidding bank shareholders to target bank shareholders. Synergistic reasons appear to be the main force behind bank M&As, explaining why returns to the combined institution are positive on average (Becher, 2000). Analogous results are also achieved by Houston and Ryngaert (1994), albeit with the combined institution only achieving non-significant returns.

Cybo-Ottone and Murgia (2000) show that for European mergers, target institutions can also expect to earn large, positive abnormal returns during the days surrounding the official M&A announcement. However, in contrast to US studies, acquirers do not appear to destroy shareholder wealth when engaging in M&As. The deviation of these results to prior US findings is explained by differences in the regulatory regimes in Europe and the US (Cybo-Ottone & Murgia, 2000). Beitel et al. (2004) more closely investigate the drivers of European bank M&As and find that acquiring banks are most successful when they purchase a relatively well-managed and efficient target, as opposed to turnaround candidates. More recent studies, such as Hankir et al. (2011), show that the return patterns observed for US and European target and bidding banks still hold. It should be noted though, that European targets earn lower returns on average than their US peers.

Research on bank mergers and acquisitions outside of the US and European markets is still rather scarce and very few studies exclusively look at the emerging economies of Asia and Latin America. This is surprising as these countries continuously gain in importance to the global economy and potentially offer attractive investment opportunities, especially for foreign banks operating in mostly consolidated markets. Moreover, banking regulation is increasingly harmonized, which should make it easier for foreign banks to enter and succeed in these markets, as a more level playing field is created. In particular, the integration of Asian financial markets, especially equity markets, is well underway (Yu, Fung, & Tam, 2010). Waheed and Mathur (1995) are one of the first to investigate whether the mode of entry determines the success of US banks when they expand into foreign markets. They show that it does matter and that the opening of branches is perceived as preferable, as this leads to significant and positive returns on average. On the other hand, entry via subsidiaries, joint ventures, or outright acquisitions leads to significant negative returns, possibly due to the costs associated with those forms of entry being relatively high in the past.

Kiyamaz (2004) examines the wealth effects of US bidders engaging in foreign acquisitions. He shows that especially acquisitions in Latin America enhance the shareholder value of the bidding institutions. A large part of these gains can be explained by macroeconomic variables, such as the economic

development status of the target country and the level of government efficiency. Kolaric and Schiereck (2013) later also point out that bidding banks in Latin America earn, on average, significant and positive returns on the announcement day. The results of Goddard et al. (2012) likewise show that mergers among Latin American banks lead to insignificant returns for acquiring institutions.

Bank M&As in Asia are likewise not well documented. The evidence so far suggests that financial institutions do not destroy shareholder wealth when acquiring other financial institutions in Asia (Kiymaz, 2004), a result similar to that observed in Europe. In particular, Kiymaz (2004) documents for a subsample of US bidding banks that they earn insignificant returns in Asia. In contrast, the results of Crouzille, Lepetit, and Bautista (2008) show that bank M&As in Asia have a negative effect on the share price of the acquiring institution. However, this result is largely driven by M&As during and directly following the 1997 Asian Financial Crisis and by transactions in less mature economies. Goddard et al. (2012) again find non-significant returns for Asian bidding banks that acquire targets in other emerging Asian economies. It should be noted though, that their sample also includes minority acquisitions, which ought to have a less of an effect on shareholder wealth, for both target and acquirer. For bank mergers in the Asia-Pacific region we therefore test the following hypothesis:

H1-1: *Bank mergers in the Asia-Pacific region result in non-significant returns for the bidding banks and positive returns for the target banks.*

DeLong (2001) shows that for US banks particularly geographic and activity focus lead to better results for bidding banks. Cybo-Ottone and Murgia (2000) document similar results for European mergers, as domestic deals lead to better results. They also find that deals diversifying a bank's operations into the insurance business lead to positive shareholder wealth effects for bidding banks. Likewise, Beitel et al. (2004) find that domestic mergers perform better than cross-border ones. We therefore expect that Asian bidding banks will perform better than their non-Asian peers, as transactions between Asian banks are akin to geographically focusing mergers. Non-Asian bidders, however, can be expected to earn negative returns, as their choice of target might be limited and expansion into a different regulatory and cultural environment may be perceived as more risky. We therefore hypothesize:

H1-2: *Asian bidding banks achieve significantly higher returns than their non-Asian peers.*

2.2 Rival effects of M&As

M&As have the ability to change the competitive landscape of an entire industry and will therefore likely affect the rivals of the merging firms as well. In order to properly measure the total effect of the consolidation process within a particular industry, these external effects ought to be included in the analysis (Berger, Demsetz, & Strahan, 1999). Starting with the work of Eckbo (1983) and Stillman (1983), research has emerged on the effects that M&As have on the share price of the rival companies within the same industry sector (e.g. Eckbo, 1985, 1992; Hankir et al., 2011; Song & Walkling, 2000). This research suggests that M&As are overall beneficial for an industry, as rivals experience positive wealth effects when a competitor is acquired. This led to the development of three competing, but not mutually exclusive hypotheses to explain the observed effects: the Market Power Hypothesis, the Efficiency Hypothesis, and the Acquisition Probability Hypothesis.

The Market Power Hypothesis is based on the assumption that mergers will lead to an increase in the market power for the remaining firms and may therefore lead to subsequent anticompetitive behavior by the remaining firms. Particularly in the banking industry, the possibility of such behavior leads to extensive scrutiny by antitrust authorities of mergers, as M&As may, among other things, lead to more restrictive lending behavior by banks (see e.g. Berger, Goldberg, & White, 2001). Eckbo (1983) and Stillman (1983) pioneered the application of the event study methodology to investigate the Market Power Hypothesis and its effect on shareholder wealth. They argue that horizontal mergers should not only lead to positive wealth effects for the bidding firm, but also for its rivals, as all companies within a given industry should profit from an increase in its concentration level. However, even though market power considerations are frequently cited as a possible reason for the observed positive rival effects, the majority of studies argue that it is not the main driver behind M&As (e.g. Eckbo, 1983, 1985, 1992; Stillman, 1983).

There is little evidence in regard to the rival effects of bank mergers. In their study, Hankir et al. (2011) examine the rival effects to US and European bank mergers. They find evidence that, among the investigated hypotheses, market power considerations play an important role when market participants evaluate bank mergers. In particular, return patterns, which are in line with those expected by the Market Power Hypothesis, are significantly related to intra-industry mergers, increasing market concentration, and large relative target size. This result suggests that bank M&As lead to a significant reduction in competition. Asian financial markets still offer more room for consolidation than those of the US and Europe. The Market Power Hypothesis is therefore likely to be relevant for takeovers among Asian institutions. In this case not only the bidder, but also the bidder's closest rivals stand to gain from further consolidation, as this may result in a decrease in competition and an increase in market power, making it possible for the remaining firms to raise prices and as a result increase their profits. This can be summarized in the following hypothesis:

H2-1: *The rivals of Asian bidding banks earn significant positive returns.*

The rivals of non-Asian bidder are likely to earn slightly negative returns, as another bank's decision to engage in a foreign transaction can be interpreted as a negative signal of the conditions in its domestic market. On the one hand, the market may be largely consolidated, offering fewer targets without raising regulatory and antitrust concerns, on the other hand, there may be a lack of growth opportunities. This leads to the hypothesis:

H2-2: *The rivals of non-Asian bidders earn non-significant returns.*

The literature on bank mergers frequently shows that M&As are more successful if the efficiency differential between acquiring and target institution is high (e.g Akhavein, Berger, & Humphrey, 1997; Beitel et al., 2004). The Efficiency Hypothesis suggests that, if the combined entity is able to increase its overall efficiency levels following a merger, this could potentially result in heightened levels of competition within an industry and may ultimately make it more challenging for rivals to maintain their current performance and market share. Therefore, the rival effects are not necessarily positive, as suggested by the Market Power Hypothesis, but could also be negative.

Yet, the relationship is not one-directional. Rivals have, by definition, similar operations and production technologies. As a result, the announcement of a merger may be perceived by the market as a signal that rival companies have a similar potential to increase their efficiency levels (Eckbo, 1983). Claessens, Demirgüç-Kunt, and Huizinga (2001) even document efficiency improvements for domestic banks following the market entry of foreign banks through M&As. This can be interpreted as evidence that rival firms are able to benefit from efficiency spillover effects that arise from the existence of more efficient peer companies. Therefore, rivals may also obtain positive stock returns upon an M&A announcement (Eckbo, 1983). However, as the Market Power Hypothesis and the Efficiency Hypothesis are not mutually exclusive, the observed rival returns may reflect the combined effect of both hypotheses. Eckbo (1983) shows that the rival effects for horizontal as well as vertical mergers are positive and therefore concludes that the observed rival gains are more likely to stem from anticipated future cost saving rather than increased market power.

The fundamental idea behind the Acquisition Probability Hypothesis is that the target of an acquisition as well as its rivals will earn positive abnormal returns surrounding the announcement of an M&A transaction, as this will increase their probability of becoming a target in the future (Song & Walkling, 2000). Eckbo (1992) is the first to point out that an increase in the acquisition probability of the remaining institutions may be an additional driver for the observed positive rival returns upon

a merger announcement. Song and Walkling (2000) conduct a comprehensive empirical investigation of the Acquisition Probability Hypothesis. They also find evidence in support of this hypothesis, as rivals earn significant abnormal returns on the announcement day of an acquisition, regardless of the ultimate outcome of the takeover. Moreover, they also show that the cross-sectional variation of the rival returns are largely linked to variables that indicate the likelihood of an acquisition. Akhigbe and Madura (1999) obtain similar results. We therefore hypothesize:

H3-1: *The rivals of target banks achieve significant positive returns.*

Akhigbe and Martin (2000) document that the returns patterns predicted by the Acquisition Probability Hypothesis are particularly pronounced for the target rivals of cross-border M&As. Foreign entry into a market may increase the competition in that market, but the positive signal that foreign takeovers send to capital markets in regard to growth opportunities and favorable asset valuations appear to offset these concerns. Yet, foreign market entry can also be viewed as evidence of anticipated future efficiency gains to firms in the same industry, as documented by Claessens et al. (2001) and therefore does not preclude the Efficiency Hypothesis. Similar to Akhigbe and Martin (2000), Otchere and Ip (2006) show for a sample of completed and aborted cross-border acquisitions in Australia that the Acquisition Probability Hypothesis and the associated return patterns are especially pronounced for the targets of those takeovers. The Acquisition Probability Hypothesis may therefore be more relevant for transactions undertaken by non-Asian institutions. Not only are the targets of non-Asian bidders poised to gain positive returns, but also their rivals, as acquisitions by non-Asian financial institutions may indicate favorable industry conditions and growth opportunities or signify potential future efficiency spillovers. At the same time it raises the probability of the remaining firms to become a takeover target in the future. This can be summarized in the following hypothesis:

H3-2: *The rivals of targets by non-Asian bidders achieve significantly higher returns than rivals of targets of Asian bidders.*

The present study is the first one to document the industry wide wealth effects of bank mergers in the Asia-Pacific region and that the effects may differ, depending on the origin of the acquirer and the signals a takeover sends to capital markets. At the same time, it closes a gap in the research on M&As among financial institutions and offers comprehensive analysis on the success of the consolidation process in one of the most dynamic regions in the world.

3. DATA SET AND METHODOLOGY

3.1 Bidder and target bank data selection and sample description

Our primary source for M&As among financial institutions is the Thomson Financial Securities Data Company (SDC) Mergers and Acquisition database. For an event to be considered, the target of the transaction has to be from the Asia-Pacific region, whereas no restriction is placed on the nationality of the acquiring institution. We define the countries in the Asia-Pacific region following the regional member list of the Asian Development Bank. The official M&A announcement date has to be between January 1995 and December 2013 and the target and bidder have to be a financial institution (primary Standard Industry Classification (SIC) codes from 6000 to 6289 and SIC codes 6712 and 6733). We therefore explicitly exclude all insurance carriers, real estate companies, non-bank holding companies and miscellaneous investment companies, such as oil royalty traders and patent owners and lessors. Additionally, we require the transaction to be completed and that a transaction value is explicitly recorded. Furthermore, we only consider majority acquisitions, i.e. acquisitions in which the bidding institution held less than 50% of the target prior to the announcement and obtained a controlling stake through the M&A transaction. Thus, subsequent increases in ownership of the bidding bank and minority acquisitions are disregarded. We also require that at least the bidding bank is listed on a stock exchange and that stock price data is available in good quality.

In a next step, we verify that the official announcement day recorded in the SDC Mergers and Acquisition database is correct by checking them with official company announcements and the Nexis database. Any discrepancies are resolved by using the first official announcement date that we are able to identify. Furthermore, we ensure that no major confounding events occur during the [-5;5] day event window, such as other M&A announcements or CEO changes, again using the Nexis database. Using the above criteria, we identify a total of 150 events for bidding banks from 23 different nations with a total deal value in excess of 258 billion US dollars. However, due the majority of targets being private and the data quality for the publicly listed targets being comparatively poor, only 31 exchange-listed targets can be analyzed out of our sample of 150 announcements. For this reason we do not describe the target sample in great detail here, but merely point out some trends. Table 1 shows the distribution of acquiring and target nations for the sample. The most frequent acquiring nation is Japan with a total of 28 transactions, 26 national takeovers and two cross-border deals. This is followed by M&As of Australian banks, 19 being national and six cross-border. The third most M&As are recorded for South Korean financial institutions, consisting of 17 national deals and two cross-border ones.

Table 1: Geographic distribution of acquiring and target nation

This table shows the geographic distribution of the bidding and target bank sample. AU=Australia, AT=Austria, BD=Bangladesh, CH=Switzerland, CN=China, DE=Germany, FJ=Fiji, FR=France, HK=Hong Kong, ID=Indonesia, IN=India, JP=Japan, KH=Cam-
bodia, KR=South Korea, KZ=Kazakhstan, MY=Malaysia, NL=Netherlands, NZ=New Zealand, PH=Philippines, PK=Pakistan,
RU=Russia, SG=Singapore, TH=Thailand, TW=Taiwan, UK=United Kingdom, US=United States, ZA=South Africa.

Target	Acquirer nation																				Total			
nation	AU	AT	CH	CN	DE	FR	HK	ID	IN	JP	KR	MY	NL	NZ	PH	PK	RU	SG	TH	TW	UK	US	ZA	Total
<i>Panel A: Acquirer sample</i>																								
AU	19																				2	2		23
BD																					1			1
CN				1		1					1											1		4
FJ	2																							2
HK	1		1	1			5											3		1	1		1	14
ID	1				1			2	2															6
IN									10												2			12
JP										26											1			27
KH											1													1
KR											17											2	1	20
KZ		1							1									1						3
MY												4												4
NZ	1													1								1		3
PH										1					1			1			1	1		5
PK												1				1						1		3
SG																								2
TH				1						1			1					1	1			1		6
TW	1								1				1								9	2		14
Total	25	1	1	3	1	1	5	2	14	28	19	4	3	1	1	1	1	7	1	11	14	5	1	150
<i>Panel B: Target sample</i>																								
AU	6																							6
HK			1																					2
IN									4															4
JP										8														8
KR											1													1
MY												1												1
NZ	1																							1
PK													1			1						1		3
TH													1											1
TW																						3	1	4
Total	7	0	1	0	0	0	0	0	4	8	1	1	2	0	0	1	0	1	0	3	2	0	0	31

Table 2 shows the distribution of the deals of the acquirer and target sample and their value by origin of acquirer, geographic focus of the transaction, and distribution over the investigation period. Approximately two thirds of acquirers are from Asia, while the other third are from non-Asian countries, such as the US, the Western European nations, and Australia.² The value of acquisitions by Asian acquirers far exceeds those by non-Asian acquirers with more than 200 billion US dollars. Similar numbers can be obtained when looking at the geographic focus of the events (Table 2 Panel B). The majority of events are national M&As, led by Japanese and Australian national transactions, while cross-border deals are relatively few and make up less than a third of all events. In addition, cross-

² Asia is defined in this case along the classical geographic demarcation of Asia and does not include countries in the Pacific region. The following countries in our sample are identified as Asian: China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Singapore, South Korea, Taiwan and Thailand. The following countries in our sample are considered non-Asian: Australia, Austria, France, Germany, the Netherlands, New Zealand, Russia, South Africa, Switzerland, the United Kingdom and the United States.

border deals account for only 13.50% of the total deal value, or less than 35 billion US dollar. This indicates that cross-border deals are, on average, smaller than national ones.

Table 2: Bidding and target bank sample description

This table shows the origin of the acquirer, the geographic focus, and the distribution of events through time of the bidding and target bank sample. Asian bidders are defined to be from one of the following countries: China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Singapore, South Korea, Taiwan and Thailand. Bidders from the following countries are considered non-Asian: Australia, Austria, France, Germany, the Netherlands, New Zealand, Russia, South Africa, Switzerland, the United Kingdom and the United States. The deal value is given in US dollars as of the time the deal was officially announced.

	Bidder sample				Target sample			
	Number of deals	Percentage of deals	Deal value (million US\$)	Percentage of total deal value	Number of deals	Percentage of deals	Deal value (million US\$)	Percentage of total deal value
<i>Panel A: Origin of bidder</i>								
Asia	96	64.00%	206,901.50	80.08%	20	64.52%	26,777.86	16.18%
Non-Asia	54	36.00%	51,470.27	19.92%	11	35.48%	138,678.97	83.82%
Total	150	100.00%	258,371.77	100.00%	31	100.00%	165,456.83	100.00%
<i>Panel B: Geographic focus</i>								
National	99	66.00%	223,486.18	86.50%	24	77.42%	152,367.52	92.09%
Cross-border	51	34.00%	34,885.59	13.50%	7	22.58%	13,089.31	7.91%
Total	150	100.00%	258,371.77	100.00%	31	100.00%	165,456.83	100.00%
<i>Panel C: Frequency by years</i>								
1995	4	2.67%	35,493.53	13.74%	1	3.23%	503.23	0.30%
1996	3	2.00%	3,325.59	1.29%	2	6.45%	3,098.67	1.87%
1997	1	0.67%	1,129.54	0.44%	1	3.23%	1,129.54	0.68%
1998	4	2.67%	1,314.09	0.51%	1	3.23%	181.50	0.11%
1999	12	8.00%	47,563.92	18.41%	2	6.45%	45,823.36	27.70%
2000	12	8.00%	32,708.08	12.66%	2	6.45%	19,356.13	11.70%
2001	9	6.00%	10,546.70	4.08%	2	6.45%	5,947.43	3.59%
2002	6	4.00%	5,245.03	2.03%	2	6.45%	3,626.51	2.19%
2003	9	6.00%	8,134.89	3.15%	1	3.23%	1,729.16	1.05%
2004	8	5.33%	4,110.86	1.59%	-	-	-	-
2005	10	6.67%	46,197.41	17.88%	2	6.45%	41,511.54	25.09%
2006	10	6.67%	2,489.65	0.96%	3	9.68%	1,582.18	0.96%
2007	11	7.33%	5,920.53	2.29%	4	12.90%	2,437.10	1.47%
2008	12	8.00%	27,845.07	10.78%	3	9.68%	24,874.85	15.03%
2009	14	9.33%	12,530.52	4.85%	2	6.45%	9,519.64	5.75%
2010	7	4.67%	4,401.02	1.70%	3	9.68%	4,135.99	2.50%
2011	4	2.67%	865.93	0.34%	-	-	-	-
2012	7	4.67%	1,129.34	0.44%	-	-	-	-
2013	7	4.67%	7,420.08	2.87%	-	-	-	-
Total	150	100.00%	258,371.77	100.00%	31	100.00%	165,456.83	100.00%

The distribution of deals through time also offers some valuable insights. The number of M&A deals is roughly evenly distributed between the first half of the investigation period from 1995 to 2004 and the second half of the investigation period from 2005 to 2013. Most transactions during a single year occur during 2009 (14), followed by the years 1999, 2000 and 2008 with 12 transactions each. The largest total deal values can be observed for the years 1999 and 2005 with approximately 47.6 billion US dollars and 46.2 billion US dollars, respectively. That these years have such high transaction values can be explained by megamergers among Japanese banks. In particular, in 1999 Sumitomo Bank announced the acquisitions of a majority stake in Sakura Bank, a deal valued at 45.5 billion US dollars at the time. In 2005 Mitsubishi Tokyo Financial Group announced the acquisition of UFJ Holdings for more than 41 billion US dollars.

The sample of exchange-listed targets are mainly from Japan (8), followed by Australia (6) and India (4). Nevertheless, even though the target sample consists of only 31 M&A events, the overall deal value is approximately 165.5 billion US dollars, which is approximately 64% of the total transaction

volume. This is not surprising, as only the largest deals, such as the ones between Sumitomo Bank and Sakura Bank and Mitsubishi Tokyo Financial Group and UFJ Holdings, have targets that are publicly listed and stock data available in sufficient quality as to allow for an analysis of the returns surrounding the announcement day.

3.2 Rival bank data selection and sample description

In order to select the appropriate rivals for each exchange-listed bidding and target bank, we follow the approach of Hankir et al. (2011) with some modifications. In a first step we determine all financial institutions in the country of origin of each bidding and target bank via Datastream. The definition of a financial institution is the same as for the bidding and target bank sample, including all firms with a primary SIC code ranging from 6000 to 6289 and primary codes 6712 and 6733. Next, in order to arrive at the closest rival firm for each bidding and target institution, we use the following selection process: First, the bidding and target bank rivals need to be domiciled in the same country as the bidder or target and they need to be listed on a stock exchange. Second, the first two digits of the primary SIC code of bidder and target firm need to match with those of the rival firm. Third, the three closest rival firms, as measured by market capitalization, are selected. All observations that did not yield at least three rivals are dropped. Additionally, the stock price data of the rival company must be available in sufficient quality from 272 days prior to the M&A announcement day to five days after it.

The first requirement is rather restrictive, especially for smaller markets with lower data quality, such as Malaysia or the Philippines, and for largely consolidated markets, such as many of the European countries, with few exchange listed financial institutions remaining. Nevertheless, we prefer to use country specific rivals, as the capital markets in the Asia-Pacific region were rather heterogeneous during most of the investigation period and just recently started to converge. Some markets, such as the ones of Australia and Japan, are very similar to those of the developed economies in the US and Europe, while others are still in the process of developing more mature capital markets, such as Thailand and Malaysia. Additionally, some countries, for example South Korea, Hong Kong, and Taiwan, appear to be in a transitional stage between developing and developed capital markets. Therefore, choosing national rivals rather than regional ones is more appropriate. Furthermore, by requiring a match in for the two digit SIC code rather than the four digit SIC code, we ensure that the rivals are in a similar line of business. Four digit SIC codes frequently lead to some misclassifications for non-US financial institutions.³

³ We also conducted a rival selection with the requirement of the same three digit primary SIC code. This lead to largely the same rivals. A match of the same four digit primary SIC code did not achieve desirable results, as the four digit

Table 3: Rival bank sample description

This table shows the average, median, and standard deviation of the market capitalization of the bidding banks and their closest rivals and the target banks and their respective closest rivals. The market capitalization is taken as of the last trading day prior to the event year. The two digit SIC codes 60 stands for “Depository Institutions”, the two digit SIC codes 61 stands for “Nondepository Credit Institutions”, and the two digit SIC codes 62 stands for “Security and commodity brokers, dealers, exchanges, and services”. Asian bidding and target bank rivals are defined to be from one of the following countries: China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Singapore, South Korea, Taiwan and Thailand. Bidding and target bank rivals from the follow countries are considered non-Asian: Australia, Austria, France, Germany, the Netherlands, New Zealand, Russia, South Africa, Switzerland, the United Kingdom and the United States.

	All bidder rivals	Non-Asian bidder rivals	Asian bidder rivals
<i>Panel A: Bidding bank rivals</i>			
Average difference in rival market capitalization to bidder	34.92%	47.62%	27.42%
Median difference in rival market capitalization to bidder	26.21%	46.70%	18.62%
Standard deviation difference in rival market capitalization to bidder	28.98%	31.24%	24.70%
n	420	156	264
n with two digit SIC code 60	390	150	240
n with two digit SIC code 61	6	0	6
n with two digit SIC code 62	24	6	18
<i>Panel B: Target bank rivals</i>			
	All target rivals	Non-Asian bidder target rivals	Asian bidder target rivals
Average difference in rival market capitalization to target	26.55%	39.19%	20.55%
Median difference in rival market capitalization to target	18.89%	34.43%	16.10%
Standard deviation difference in rival market capitalization to target	23.51%	27.66%	18.72%
n	84	27	57
n with two digit SIC code 60	78	27	51
n with two digit SIC code 61	3	0	3
n with two digit SIC code 62	3	0	3

Following the above described selection process, we are able to determine three suitable rivals for 140 bidders out of our sample of 150 bidding banks, giving us a total of 420 rival observation. From our 31 firm exchange-listed target sample, we are able to identify three rivals for 28 institutions, giving us a total of 84 observations. Table 3 gives a brief overview of the market capitalization of the rival sample in relation to the bidding and target institutions and the frequency of observations for their respective two digit SIC codes.

The average market capitalization of a bidding bank’s rival is within approximately 35% of the bidding bank. For the rivals of Asian bidding banks, this value is even lower, being closer to 27.5%. However, for non-Asian bidder rivals it is much larger, with the average difference being within 47.5%. This large difference may reflect that the overwhelming majority of non-Asian bidders originates from the advanced economies of the US and Europe, where banking markets are already largely consolidated with fewer potential national rivals. It is also possible that only the largest non-Asian financial institutions have the capability to undertake acquisitions in an entirely different region than

primary SIC codes available on Datastream for non-US financial institutions appear to be error prone. For example, non-US commercial banks have almost exclusively a primary four digit SIC code of 6029 (“Commercial Banks, not elsewhere classified”), whereas US commercial banks generally follow a more detailed categorization.

their home market. Most observations are confined to the two digit SIC code 60, “Depository Institutions”, with few exceptions.

The descriptive statistics for the target sample offer some valuable insights. For target rivals, the average rival market capitalization is within approximately 26.5%. This difference is larger for the rivals of targets by non-Asian bidders, being almost 40%. This may reflect the market entry choice of non-Asian bidders into Asia and their subsequent target selection. They can either choose to acquire a relatively small financial institution and enter a new market on a smaller scale or they can decide to engage in a larger expansion by purchasing a relatively large and well established financial institution. The rivals of the targets of Asian bidders are much closer in market capitalization to the target bank, on average being within 20.5% of the target bank. This may indicate the option of Asian bidders to choose targets that are more in the middle of the valuation range and be more reflective of a general tendency towards market consolidation. Again, the majority of observations are for the two digit SIC code 60.

3.3 Empirical methodology

The methodology follows the market model event study, as originally defined by Dodd and Warner (1983) and Brown and Warner (1985). However, prior research suggest that stock returns frequently show a considerable degree of heteroskedasticity (Schwert & Seguin, 1990). Therefore, the assumption that volatility is constant over time has to be dropped. Research by Brockett, Chen, and Garven (1999) suggests that abnormal returns calculated using the classical event study methodology are too high, probably due to the assumption of constant volatility. They therefore propose the use a model which also incorporates autoregressive conditional heteroskedastic effects (ARCH). This approach allows for time-varying volatility and should derive abnormal returns, which more closely reflect the abnormal returns actually achieved. Due to time-varying volatility, it is assumed that the error term follows a generalized autoregressive conditional heteroskedastic process (GARCH) with a lag of one in the conditional variance and squared error (GARCH(1,1)).

Notwithstanding the advantages of the GARCH model, it still cannot properly capture the asymmetry of returns frequently observed in stock price return time series. Engle and Ng (1993) show that asymmetric models, such as the Exponential GARCH (EGARCH) model, first introduced by Nelson (1991), are one of the best methods for forecasting volatility. Bekaerta and Harvey (1997) provide evidence that this kind of approach is especially suitable when modeling volatility and stock returns in emerging equity markets. In addition, EGARCH is also less sensitive to market shocks and volatilities estimated using EGARCH are not bound to the same constrains that ordinary GARCH volatilities are subject to.

The market model with EGARCH specifications is estimated using a 252 trading day period (one whole trading year) from 272 days to 21 days prior to the official merger announcement with:

$$R_{jt} = \hat{\alpha}_j + \hat{\beta}_j R_{mt} + \varepsilon_{jt} \quad (1)$$

where R_{jt} is defined as the return of stock j on day t during the estimation period, R_{mt} is defined as the return of the respective value-weighted Datastream country index on day t , and $\hat{\alpha}_j$ and $\hat{\beta}_j$ are the regression coefficients of stock j , representing the slope coefficient and the sensitivity of stock j to the Datastream country index. The error term ε_{jt} in the EGARCH model is conditioned on the prior information set Ω_{t-1} :

$$\varepsilon_{jt} | \Omega_{t-1} \sim N(0, h_t) \quad (2)$$

where $N(0, h_t)$ stands for the conditional distribution of the error term, given all information available at time $t-1$. The conditional distribution is assumed to have a mean of zero and a variance of h_t . According to Bollerslev (1986) and Elyasiani and Mansur (1998) financial data is best described by the lags $p=1$ and $q=1$ for the conditional and unconditional variance, respectively. The logarithm of the conditional variance h_t in the EGARCH(1,1) model is an asymmetric function of lagged disturbances taking the form of:

$$\ln(h_t^2) = \omega + \delta \ln(h_{t-1}^2) + \psi g(z_{t-1}) \quad (3)$$

where h_t is the conditional variance on day t , ω , δ and ψ are coefficients and $g(z_{t-1})$ is an asymmetric response function, which is defined as:

$$g(z_{t-1}) = \theta z_t + \gamma [|z_t| - E(z_t)] \quad (4)$$

where θ and γ are coefficients, and z_t is a zero-mean i.i.d. sequence with a continuous distribution. The parameters defined in equations (3) and (4) are estimated using the maximum likelihood method. The daily abnormal returns (AR) during the $[-5;5]$ day event window surrounding the announcement day $t=0$ are calculated using:

$$AR_{jt} = R_{jt} - (\hat{\alpha}_j + \hat{\beta}_j R_{mt}) \quad (5)$$

where $t \in [-5, \dots, 5]$. Average ARs (AAR) are in turn calculated as:

$$AAR_t = \frac{1}{N} \sum_{j=1}^N AR_{jt} \quad (6)$$

where AAR_t is the average abnormal return for all N M&A events in the sample on day t . The cumulative abnormal return (CAR) for stock j during the event window $[\tau_1; \tau_2]$ with $\tau_1, \tau_2 \in [-5, \dots, 5]$ is calculated as:

$$CAR_{j, [\tau_1; \tau_2]} = \sum_{t=\tau_1}^{\tau_2} AR_{jt} \quad (7)$$

For a sample of N M&A events, the average CARs (ACARs) are calculated as:

$$ACAR_{[\tau_1;\tau_2]} = \frac{1}{N} \sum_{j=1}^N CAR_{j,[\tau_1;\tau_2]} \quad (8)$$

A 15 day gap between the last day of the estimation period and the first day of the event period is included to ensure the estimation of the parameters are not influenced by the event itself.

Multiple significance tests are used to determine whether the observed AARs and ACARs are statistically different from zero. We employ the variance-change corrected standardized cross-section test introduced by Boehmer, Musumeci, and Poulson (1991), the BMP-test. We incorporate the correction for serial dependence that can occur when summing up successive abnormal returns that are estimated using the same parameters. This correction was first introduced by Mikkelsen and Partch (1988) and incorporated into the Boehmer et al. (1991) test statistic by Cowan (1993). Furthermore, we also test for significance using the nonparametric rank test first introduced by Corrado (1989) and later refined by Corrado and Zivney (1992), the Corrado-test. In order to test whether statistically significant differences exist between two subsamples, we use the parametric two-sample *t*-test and the nonparametric Wilcoxon rank-sum test.

Campbell, Cowan, and Salotti (2010) show that the parametric BMP-test can be a very useful robustness check, but the nonparametric Corrado-test is better specified in most cases and should therefore be preferred. Corrado and Truong (2008) show that the nonparametric rank test is particularly well specified for security data in the Asia-Pacific region. We therefore interpret the significance of our results according to the nonparametric test procedure, using the parametric one as a robustness test and highlight any stark differences between the two test statistics.

4. EMPIRICAL RESULTS

In this section we separately describe the event study results for bidding and target banks and their respective rivals during the eleven day period surrounding the official announcement of an M&A transaction. This allows us to obtain a comprehensive picture of the wealth effects of the institutions directly involved in a transaction and their closest rivals. In this way we are able to derive conclusions on overall success of M&A transactions in the Asia-Pacific region and the impact the takeover have had on the financial sector in the region.

4.1 Performance of bidding banks and their rivals surrounding M&A announcements

The results for the entire bidding bank sample and their rivals are presented in Table 4. Overall, the results show slightly positive returns, but they lack significance. This overall results is similar to studies on the early success of European bank M&As during the pre-Euro era (e.g. Beitel et al., 2004) and prior studies on M&As in emerging economies (e.g. Goddard et al., 2012; Kiyamaz, 2004), with a positive ACAR 0.46% on the announcement day and 0.99% during the three day event window

surrounding the official announcement day. Yet, unlike prior studies on the consolidation of the financial sector in the US (e.g. Becher, 2000), this indicates that bidding banks in the Asia-Pacific region do not destroy shareholder wealth.

In order to investigate whether the results for non-Asian and Asian bidding banks differ, we divide the sample into these two subgroups. This leaves us with 54 non-Asian and 96 Asian bidding banks (see also Table 4). The ACAR for non-Asian bidding banks is slightly negative, albeit mostly still lacking in significance. However, on the announcement day [0] and during the [-1;1] day event window, non-Asian acquiring banks obtain negative ACARs, which are weakly significant according to the BMP-test statistic. This results is very similar to the ones observed for bidding banks in the US and Europe (e.g. Hankir et al., 2011) as acquirers earn negative ACARs, which are slightly significant. However, as the Corrado-test again lacks in significance for all event windows, the overall evidence for an actual destruction in shareholder wealth appears to be limited.

The results for Asian acquirers, on the other hand, stand in stark contrast to those of their non-Asian peers (see Table 4). Asian bidding banks achieve highly significant and positive ACARs of 0.94% on the announcement day [0] and of 1.87% during the three day event window surrounding it. Moreover, there is no evidence of information leakage prior to the official announcement, as pre-event windows lack significance. The test for the difference in the returns of non-Asian and Asian bidding banks underscores this difference in performance. The two-sample *t*-test as well as the Wilcoxon rank-sum test suggest that the difference is statistically highly significant, especially on the announcement day and during the three days surrounding the official announcement. It therefore appears as if capital markets perceive M&A transactions by Asian bidding banks far more favorably than by non-Asian banks. It stands to reason that non-Asian banks acquire banks that are either undesirable for local banks or have to pay significantly more in order to outbid their Asian counterparts.

The capital market reaction to the bidding bank's closest rivals are presented on the right hand side of Table 4. Concurrent to the results for the entire bidding bank sample, none of the investigated event windows show significant returns. The rival returns over the entire event period are very small, but mostly positive, suggesting that the bidder's decision to engage in an M&A transaction has a limited influence on its rivals at best.

Splitting the sample into the rivals of non-Asian and Asian bidders, however, offers some valuable insights (see also Table 4). Similar to the results of the bidding bank sample, the capital market reactions for the different groups differ significantly from each other. The rivals of non-Asian bidding banks show almost no significant market reactions. This lack of significance is largely expected, as non-Asian acquirers overwhelmingly engage in cross-border transactions, which should have little impact on the competitive environment in their respective country of origin. Nonetheless, the weak tendency towards negative abnormal returns during the entire event window can be interpreted as a

signal of deteriorating growth opportunities in the bidder's home country. Those banks engaging in acquisitions in Asia do so, as their home market offers fewer or no attractive targets or because further acquisitions could be subject to thorough regulatory scrutiny.

Table 4: Event study results for bidding banks and their rivals

Stock market reaction of bidding banks and their respective rivals to M&A announcements in the Asia-Pacific region. This table reports the cumulated abnormal returns estimated for bidding banks and their rivals over multiple event windows for bank mergers in the Asia-Pacific region between 1995 and 2013. Daily abnormal returns are obtained using the market model with an EGARCH (1,1) specification and a 252 trading day estimation period. The respective Datastream country index of the bidding bank's country of origin is used as the market portfolio. Rivals are selected using the following approach: (i) the bidding bank rivals need to be domiciled in the same country as the bidder and need to be listed on a stock exchange, (ii) the first two digits of the primary SIC code of the bidder need to match with those of its rival, and (iii) the three closest rival firms, as measured by market capitalization, are selected. All observations that did not yield at least three rivals are dropped. Average cumulative abnormal returns are tested for statistical significance using the parametric Boehmer et al. (1991) test procedure and the nonparametric rank test, first introduced by Corrado (1989). The results for non-Asian and Asian bidding banks and their respective rivals are presented separately. In order to test whether statistically significant differences exist between the non-Asian and Asian bidding bank and bidding bank rival subsamples, the parametric two-sample *t*-test and the nonparametric Wilcoxon rank-sum test are used. *, **, *** denotes statistical significance at the 10%, 5% and 1% level.

Event window	ACAR	Median CAR	BMP-test (Z-score)	Corrado-test (Z-score)	ACAR	Median CAR	BMP-test (Z-score)	Corrado-test (Z-score)
All bidding banks (n=150)				All bidding bank rivals (n=420)				
[-5;5]	1.15%	0.37%	0.534	0.841	0.09%	-0.26%	-1.322	-0.968
[-1;1]	0.99%	0.44%	0.998	1.372	0.21%	0.13%	0.782	0.995
[0]	0.46%	-0.02%	0.605	1.256	-0.12%	-0.05%	-0.499	-0.117
[-1;0]	0.65%	0.03%	1.062	1.223	0.11%	-0.06%	0.570	1.191
[0;1]	0.79%	0.15%	0.575	1.345	-0.02%	-0.06%	-0.159	-0.055
Non-Asian bidding banks (n=54)				Non-Asian bidding bank rivals (n=156)				
[-5;5]	-0.03%	-0.22%	-0.794	0.093	-0.91%	-0.31%	-2.315**	-1.561
[-1;1]	-0.59%	-0.35%	-1.849*	-1.312	-0.34%	-0.29%	-1.181	-0.822
[0]	-0.40%	-0.46%	-1.803*	-1.606	-0.55%	-0.09%	-1.520	-1.005
[-1;0]	-0.57%	-0.37%	-1.642	-1.604	-0.58%	-0.22%	-1.289	-0.842
[0;1]	-0.42%	-0.06%	-1.946*	-1.138	-0.31%	-0.26%	-1.261	-0.875
Asian bidding banks (n=96)				Asian bidding bank rivals (n=264)				
[-5;5]	1.82%	1.04%	1.374	1.044	0.69%	-0.26%	0.263	-0.025
[-1;1]	1.87%	1.13%	2.526***	2.857***	0.54%	0.40%	1.771*	1.873*
[0]	0.94%	0.44%	2.926***	2.937***	0.14%	-0.04%	0.830	0.619
[-1;0]	1.34%	0.55%	2.888***	2.891***	0.52%	0.01%	1.949*	2.134**
[0;1]	1.48%	0.79%	2.086**	2.685***	0.16%	0.14%	0.737	0.597
Event window	Δ ACAR	Δ Median CAR	two-sample <i>t</i> -test (t-value)	Wilcoxon rank-sum test (Z-score)	Δ ACAR	Δ Median CAR	two-sample <i>t</i> -test (t-value)	Wilcoxon rank-sum test (Z-score)
Difference non-Asian and Asian bidding banks				Difference non-Asian and Asian bidding bank rivals				
[-5;5]	-1.85%	-1.26%	-1.451	-1.161	-1.60%	-0.05%	-2.491**	-1.262
[-1;1]	-2.46%	-1.49%	-2.778***	-3.021***	-0.88%	-0.69%	-2.230**	-2.297**
[0]	-1.34%	-0.90%	-3.041***	-2.645***	-0.69%	-0.05%	-2.190**	-1.555
[-1;0]	-1.90%	-0.92%	-3.157***	-2.754***	-1.10%	-0.23%	-2.686***	-1.676*
[0;1]	-1.89%	-0.85%	-2.356**	-2.441**	-0.47%	-0.40%	-1.476	-2.018**

For the rivals of Asian bidders, the capital market reactions are largely positive and even significant during the [-1;0] and [-1;1] day event window. The consolidation process among Asian financial institutions appears to be regarded as predominately positive not only for bidding banks, but also their closest rivals. This suggests that market power considerations potentially play an important role when capital markets value M&A transactions by local institutions in the Asia-Pacific region. This becomes more apparent, when the rival returns are viewed in conjunction with the positive returns by the bidding institutions. The analysis of the difference in returns of non-Asian and Asian bidding bank rivals shows that Asian bidding bank rivals perform significantly better than their non-Asian peers. This can be interpreted as further evidence that market power considerations play a more important role when capital markets value takeovers among Asian financial institutions. For non-Asian financial

firm rivals a takeover may indicate deteriorating conditions in the home market and missed expansion opportunities.

4.2 Performance of target banks and their rivals surrounding M&A announcements

The results for the entire sample of exchange-listed target banks are presented in Table 5. The overall results are in line with prior research on bank mergers and acquisitions in the US and Europe (e.g. Becher, 2000; Beitel et al., 2004; Hankir et al., 2011): Target banks earn large, positive and highly significant abnormal returns during the days surrounding the official announcement. During the entire eleven day event window, the average CAR is 13.58% and during the three day period surrounding the announcement day it is 10.26%, both highly statistically significant. On the announcement day itself, the average abnormal return is 5.08%, again highly significant. There appears to be some leakage, as pre-event windows are statistically significant, but the ACARs are small compared to those achieved during the [-1;1] day event window.

In order to investigate whether targets by non-Asian and Asian bidding banks perform differently, we divide the target sample into those institutions acquired by non-Asian bidding banks and those acquired by Asian bidding banks. Separating the sample into these two subsamples leads to few observations, only eleven for targets by non-Asian bidding banks and 20 by Asian bidding banks. The results should therefore be interpreted carefully. Nevertheless, we believe that they offer valuable insights. The results of the targets by non-Asian bidding banks shows that the ACARs they achieve is higher than for the overall sample, reaching 17.50% over the eleven day event window. The average announcement day return is 9.57%. In addition, there is evidence of significant leakage during the pre-announcement period, as pre-event windows exhibit statistically significant ACARs. During the post-announcement period the ACARs are not significant. The returns to targets by Asian acquirers are still high, with 11.42% during the [-5;5] day event window, but lower than for the entire sample. The ACARs of targets by Asian banks are about six percentage points lower than of their peers targeted by non-Asian bidders. The difference in the ACARs that the targets of non-Asian and Asian bidding banks achieve is only statistically significant in most event windows.

Looking at the results for non-Asian and Asian bidding banks in combination with those achieved by their respective targets indicate that non-Asian banks appear to pay more than their Asian counterparts. This may be due to non-Asian banks lack of local knowledge and therefore their preference to acquire publicly traded targets, where detailed information is more readily available. It is also probable that Asian bidding banks are better able to obtain information on their targets and can therefore more easily choose smaller listed or non-listed ones. A caveat to this interpretation is the small target sample size, but we are nevertheless confident that the overall trend is robust.

Table 5: Event study results for exchange-listed targets and their rivals

Stock market reaction of exchange-listed target banks and their respective rivals to M&A announcements in the Asia-Pacific region. This table reports the cumulated abnormal returns estimated for target banks and their rivals over multiple event windows for bank mergers in the Asia-Pacific region between 1995 and 2013. Daily abnormal returns are obtained using the market model with an EGARCH (1,1) specification and a 252 trading day estimation period. The respective Datastream country index of the target bank's country of origin is used as the market portfolio. Rivals are selected using the following approach: (i) the target bank rivals need to be domiciled in the same country as the target and need to be listed on a stock exchange, (ii) the first two digits of the primary SIC code of the target need to match with those of its rival, and (iii) the three closest rival firms, as measured by market capitalization, are selected. All observations that did not yield at least three rivals are dropped. Average cumulative abnormal returns are tested for statistical significance using the parametric Boehmer et al. (1991) test procedure and the nonparametric rank test, first introduced by Corrado (1989). The results for targets of non-Asian and Asian bidding banks and their respective rivals are presented separately. In order to test whether statistically significant differences exist between the targets of non-Asian and Asian bidding banks and the target bank rivals, the parametric two-sample *t*-test and the nonparametric Wilcoxon rank-sum test are used. *, **, *** denotes statistical significance at the 10%, 5% and 1% level.

Event window	All exchange-listed target banks (n=31)				All exchange-listed target bank rivals (n=84)			
	ACAR	Median CAR	BMP-test (Z-score)	Corrado-test (Z-score)	ACAR	Median CAR	BMP-test (Z-score)	Corrado-test (Z-score)
[-5;5]	13.58%	6.91%	3.955***	3.579***	3.67%	1.81%	3.118***	2.128**
[-1;1]	10.26%	6.99%	4.221***	5.931***	1.33%	0.53%	2.701***	1.922*
[0]	5.08%	2.42%	3.173***	4.129***	0.83%	0.10%	2.600***	1.597
[-1;0]	6.81%	4.27%	3.693***	5.363***	1.23%	0.18%	2.923***	1.638
[0;1]	8.53%	7.41%	3.685***	4.821***	0.92%	0.33%	2.553**	1.845*
Targets by non-Asian bidder (n=11)				Non-Asian bidder target rivals (n=27)				
[-5;5]	17.50%	15.41%	3.739***	3.126***	7.58%	6.32%	3.036***	3.526***
[-1;1]	12.77%	13.98%	4.074***	5.388***	3.97%	2.62%	3.532***	3.882***
[0]	9.57%	7.90%	3.401***	4.628***	2.04%	1.69%	2.936***	3.163***
[-1;0]	10.85%	9.17%	3.637***	5.280***	2.64%	1.64%	2.862***	2.731***
[0;1]	11.48%	11.65%	3.854***	4.592***	3.37%	2.62%	3.907***	4.260***
Target by Asian bidder (n=20)				Asian bidder target rivals (n=57)				
[-5;5]	11.42%	4.60%	2.315**	2.256**	1.82%	0.59%	1.367	0.392
[-1;1]	8.87%	5.12%	2.473**	3.568***	0.07%	0.10%	0.180	-0.042
[0]	2.62%	0.82%	1.882*	1.757*	0.25%	-0.27%	0.552	0.000
[-1;0]	4.59%	2.32%	2.638***	2.888***	0.56%	-0.14%	1.221	0.293
[0;1]	6.91%	4.52%	1.862*	2.725***	-0.24%	0.12%	-0.596	-0.344
Event window	Difference targets of non-Asian and Asian bidder				Difference non-Asian and Asian bidder target rivals			
	ΔACAR	ΔMedian CAR	two-sample <i>t</i> -test (t-value)	Wilcoxon rank-sum test (Z-score)	ΔACAR	ΔMedian CAR	two-sample <i>t</i> -test (t-value)	Wilcoxon rank-sum test (Z-score)
[-5;5]	6.08%	10.81%	0.866	1.920*	5.76%	5.72%	2.595**	2.902***
[-1;1]	3.90%	8.86%	0.805	1.755*	3.90%	2.51%	3.391***	2.749***
[0]	6.95%	7.08%	2.750**	2.663***	1.79%	1.96%	2.602**	2.586***
[-1;0]	6.27%	6.85%	2.169	2.209**	2.08%	1.78%	2.183**	2.193**
[0;1]	4.58%	7.12%	0.940	1.796*	3.61%	2.50%	4.405***	3.592***

On the right hand side of Table 5 the capital market reactions for all rival banks is presented. The reactions are mostly significant. For the entire eleven day event period, target rivals achieve an ACAR of 3.67%. This result is in line with prior results on rivals reactions (e.g. Otchere & Ip, 2006; Song & Walkling, 2000). Overall, target rivals appear to profit from further consolidation among financial institutions. Table 5 also presents the results for the rivals of targets by non-Asian and Asian bidders separately. In line with the prior analysis, the results differ significantly, depending on the origin of the bidding bank. Even though the sample sizes are comparatively small, they offer some valuable insights as to the industry wide return patterns following M&A transactions. The rivals of targets of non-Asian bidders perform significantly better than those of Asian bidders, particularly during the three day event window surrounding the takeover announcement. This result is in line with Akhigbe and Martin (2000) and Otchere and Ip (2006), who also show that target rivals, especially those of foreign acquisitions, display positive and significant market reactions surrounding M&A announcements. It does appear as if acquisitions by non-Asian financial institutions are a positive signal for the remaining competitors and that capital markets believe that it will increase the likelihood of their

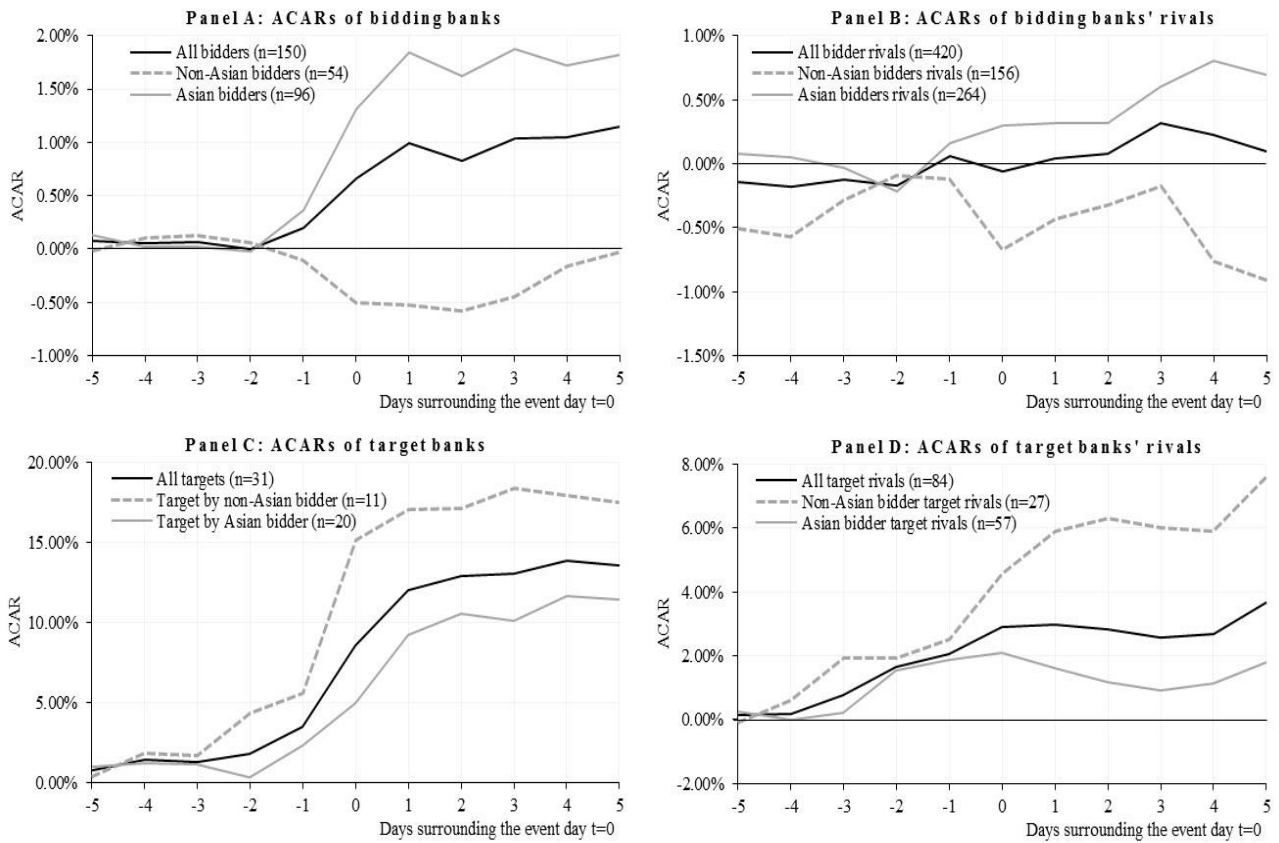
acquisition in the future. The returns to the rivals of targets of Asian bidders, on the other hand are remarkably different from those of non-Asian bidders. The previously significant abnormal returns cease to be significant and only weak significance remains for pre-announcement event windows. It therefore seems as if the rivals of targets of Asian bidding banks do not profit from further consolidation. This could indicate that the target rivals are now less likely to be acquired as further consolidation may lead to increased regulatory scrutiny.

4.4 Overall effects of the financial sector consolidation

The capital market reactions of bidding and target banks and their respective rivals differs significantly, depending on the origin of the acquiring institution. Figure 1 presents a detailed overview of the return patterns during the eleven day event period surrounding a takeover announcement.

Overall, bidding banks show little significance in their positive return patterns. However, splitting the sample into non-Asian and Asian bidders offers valuable insights: The results for non-Asian bidding banks are largely in line with prior research, as they achieve slightly negative, but only weakly significant returns (e.g. Beitel et al., 2004; Hankir et al., 2011). This gives partial support for hypothesis H1-1. Asian bidders, on the other hand, perform significantly better than their non-Asian peers, achieving an average CAR of 1.87% during the [-1;1] event window. This result stands in stark contrast to the majority of prior research findings and gives support to hypothesis H1-2. Looking at the market reactions of the Asian bidding bank rivals, they also experience gains in shareholder wealth, albeit smaller ones than the bidding banks (see Figure 1 Panel B), supporting hypothesis H2-1. The positive returns of Asian bidders and their rivals upon a takeover announcement can be interpreted as evidence for the Market Power Hypothesis. A takeover leads to fewer remaining firms in the market and higher market power for each firm. This in turn may allow them to use their market power to extract higher profits. The gains to the targets of Asian bidders and their rivals also display return patterns that are in line with the Market Power Hypothesis, as both experience gains during the event window. However, their abnormal returns are significantly lower than those achieved by the targets of non-Asian bidders and their peers. The rivals of non-Asian acquirers show only weak reactions, with a tendency towards negative returns during the [-5;5] day event window. Non-Asian bidders largely engage in cross-border acquisition (with the exception of Australian banks engaging in national takeovers), a decision that will have little impact on their domestic competitive environment. However, it can serve as a signal for capital markets that their domestic market lacks growth opportunities and further consolidation may not be possible due to regulatory concerns. Therefore, even though non-Asian bidders also earn negative returns, their peers perform even worse, giving partial support to hypothesis H2-2.

Figure 1: Bidding, target and rival bank ACARs surrounding the official M&A announcement date



The results for targets of non-Asian bidders, and their respective rivals display overall return patterns that are in line with those anticipated by the Acquisition Probability Hypothesis. Targets of non-Asian acquirers earn large abnormal returns surrounding the announcement day, much more so than their peers targeted by Asian banks. More importantly, the target's rivals also appear to earn rather large and highly significant abnormal returns, cumulating in an ACAR of 7.58% during the [-5;5] day event window. These results lend support to both hypotheses H3-1 and H3-2. This reevaluation of target rivals may suggest that the economic conditions in the target's home market are remarkably good. At the same time it may also reflect the reduction in the number of available targets, leading to subsequently higher prices for all remaining firms in the market. Nonetheless, it does not rule out that anticipated efficiency spillovers may also play a role in determining the return patterns.

Overall, markets appear to value takeovers among Asian financial institutions in regard to market power considerations, whereas M&As of non-Asian institutions are more in line with the return patterns hypothesized by the Acquisition Probability Hypothesis. This appears to be reasonable assumption, as regional transactions lead to more dominant players who can then use their larger market power to their advantage. Non-Asian bidders, on the other hand, send strong signals to capital markets in regard of their domestic economic environment and the potential for future growth they perceive in a different region. At the same time, foreign bidders do not decrease the level of competition in a country, as one competitor is replaced by a different one, albeit from another region.

5 DETERMINANTS OF THE SHORT-TERM MARKET PERFORMANCE

We investigate and identify the drivers of the short term stock market performance of bidding banks surrounding the announcement of an M&A transaction using a cross-section regression analysis.⁴ The multivariate ordinary least squares (OLS) regression is specified as:

$$CAR_{j, [\tau_1; \tau_2]} = \delta_0 + \sum_{i=1}^m \delta_i VAR_i + \varepsilon \quad (9)$$

where the dependent variable $CAR_{j, [\tau_1; \tau_2]}$ is the cumulative abnormal return of firm $j \in [1, \dots, N]$ during the $[\tau_1; \tau_2]$ day event window surrounding the announcement day $t=0$, VAR_i are the independent variables with $i \in [1, \dots, m]$, m being the number of variables, δ_0 is the regression constant, δ_i are the regression coefficient for the independent variable with $i \in [1, \dots, m]$ and ε is the error term. We test multiple models to offer a detailed analysis of the drivers behind successful M&A transactions in the Asia-Pacific region.

5.1 Factors influencing bidding banks short-term performance

Our investigation primarily focuses on the question whether Asian banks are more successful in the Asia-Pacific region than their non-Asian peers. In order to analyze if Asian bidding banks achieve higher CARs we use the variable *ASIAN*, which indicates whether the bidding bank is from an Asian country or not. The variable *NATIONAL* specifies domestic transactions. Prior research suggests that national M&A transactions are more likely to create shareholder value than cross-border ones (e.g. Beitel et al., 2004; Cybo-Ottone & Murgia, 2000; DeLong, 2001). The shareholders of bidding firms can also expect to receive higher returns if they bid for a private target instead of a public one (Fuller, Netter, & Stegemoller, 2002). The purchase of a private firm's assets is akin to trading in a relatively illiquid market, bidders are likely to pay lower premiums, which can be interpreted as an illiquidity discount. We use the variable *PRIVTAR* to investigate whether an acquisition of a private target leads to better stock returns to the shareholders of the bidding bank. In addition, the two interaction terms *ASIAN*×*NATIONAL* and *ASIAN*×*PRIVTAR* are introduced to explicitly investigate whether Asian bidding banks perform significantly better in domestic M&As and in M&As with private targets. We expect that these transactions will be especially successful, as they are a sign of further consolidation where market power considerations may be a more dominant motivation.

In order to control for factors that prior empirical research identified as drivers of overall bank M&A success, we include several additional variables in our regressions. The variable *VALUE* captures the size of the deal in US dollars. Larger deals can incur significant integration costs, making smaller ones preferable (Cybo-Ottone & Murgia, 2000), at the same time, larger deals possibly indicate a

⁴ Due to the small sample size of only 31 events we forgo a cross-sectional regression analysis of the target banks.

larger operational overlap and hence a larger potential for cost reductions. To analyze whether focusing mergers, i.e. M&As among institutions having the same primary SIC code, we use the variable *FOCUS*. Most studies on bank M&As find that the bidding banks' shareholders can expect to earn higher stock returns in focusing mergers than in diversifying ones (e.g. Becher & Campbell, 2005; Beitel et al., 2004). In most cases a combination of geographic and product focus performs particularly well (e.g. Cornett, McNutt, & Tehranian, 2006; DeLong, 2001). The variables *MCAP* and *ROE* are used as a size and profitability measure in the form of the market capitalization and the return on equity of the bidding bank. Larger and more profitable bidders may be able to better integrate their targets. However, this might come at the expense of future earnings. Therefore, it is likely that shareholders of large banks and banks with high ROEs perceive acquisitions to be negative. Finally, banks in Asia are often still at least partially government owned. The variable *GOV* investigates the influence of government involvement on the side of the bidding bank on its stock returns.

Recently concerns have emerged that banks engage in regulatory arbitrage through mergers and acquisitions by purchasing targets that are located in less regulated and supervised jurisdictions. Houston, Lin, and Ma (2012) find evidence that banks indeed appear to move capital into less regulated markets. However, strong property and creditor rights are also important in determining these capital flows, indicating that lower regulation and supervision does not suffice to entice banks to move funds into different countries. Klomp and de Haan (2012) document that increased regulation and supervision does not have much effect on low risk banks but are more likely to have an effect on banks with higher levels of risk. Buch and DeLong (2004) show that banks in jurisdictions with higher levels of supervisory power are actually more attractive targets for international M&A transactions. Whether regulatory arbitrage is a motivation behind bank M&A transactions in Europe is not clear. The analysis of Carbo-Valverde, Kane, and Rodriguez-Fernandez (2012) suggests that one of the drivers behind bank M&A in Europe is the possibility to shift risk onto EU safety nets. On the other hand, Hagendorff, Hernando, Nieto, and Wall (2012) find no evidence that the premiums targets receive are associated with regulatory arbitrage considerations. Even though targets in more strictly regulated countries obtain lower takeover premiums, this is most likely due to the higher compliance cost associated with such transactions.

To analyze whether differences in regulatory regimes play a role in M&A transactions in the Asia-Pacific region, we obtain proxies for regulatory and supervisory power in different countries and through time from the Bank Regulation and Supervision Survey of the World Bank. The database is created from multiple surveys and is compiled by Barth, Caprio, and Levine (2004, 2005, 2008, 2012). It is also used by Houston et al. (2012) and Klomp and de Haan (2012) in their analyses of international bank flows and banking risk and regulation, respectively.

Since regulatory regimes can change over time, we follow the approach of Houston et al. (2012) and divide our investigation period into four subperiods. During each subperiod the results of a different survey apply. Specifically, we use the first survey for the period from 1995 to 1999, the second survey for the period from 2000 to 2003, the third one for the period from 2004 to 2008 and the latest survey for the period from 2009 to 2013. The four surveys were conducted in 1998/1999, 2003, 2005/2006, and 2011/2012, respectively (see also Barth et al., 2004, 2005, 2008, 2012). Overall, the four surveys provide a comprehensive picture on the evolution of banking regulation and supervision during the last two decades. We use three specific indices: the Restriction on Banking Activity Index, the Official Supervisory Power Index and the Financial Statement Transparency Index. As we are interested whether differences in regulatory and supervisory regimes drive the returns of bidding banks in M&A transactions, we calculate the difference in these indices between the acquirer and target country, captured by the following three variables: $\Delta RESTRICTION$, $\Delta SUPERVISORY$ and $\Delta TRANSPARENCY$.

5.2 Explaining bidding bank M&A success

Table 6 presents the results of multiple OLS regressions for the bidding banks with either the [-1;1] or the [-5;5] day event window as the dependent variable. The first and basic model specification investigates whether Asian acquirers obtain higher CARs than their non-Asian peers and whether domestic transactions, the acquisition of private targets, deal value or focusing transactions significantly contribute to the success of the bidding bank. In line with the outcome of the event study, Asian bidding banks perform significantly better than their non-Asian peers. The coefficient for *ASIAN* is positive and statistically significant. Additionally, focusing transactions also appear to positively influence bidding bank returns. This is in line with prior research results, such as DeLong (2001) and Beitel et al. (2004). However, neither domestic transactions nor the acquisition of private targets or the deal size appears to influence the overall stock market performance. Yet, the returns during [-5;5] day event window are influenced by the transaction size. The coefficient is negative and highly significant, indicating that larger transactions are detrimental to shareholder wealth. The results for the other coefficients are largely confirmed.

Adding the transaction terms $ASIAN \times NATIONAL$ and $ASIAN \times PRIVTAR$ shows that domestic bank M&As and bank M&As in which the target is a private institution perform significantly better, as the coefficients for both transaction terms are statistically significant. Furthermore, the coefficients for *NATIONAL* and *PRIVTAR* change their sign and become significant. This indicates that especially cross-border acquisitions by non-Asian banks and acquisitions by non-Asian banks of public targets lead to a significant reduction in shareholder wealth. Focusing transactions still significantly enhance

the stock returns to bidding banks and the overall model appears to be well specified.⁵ Adding the two variables for bidding bank size and profitability, *MCAP* and *ROE*, does not improve the overall explanatory power of the model and the coefficients for the *MCAP* and *ROE* lack significance.

Model 4 introduces the three regulatory variables describing the differences in the regulatory and supervisory regimes in the acquiring and target bank's country of origin. The results are largely in line with those of Model 2 and Model 3. The coefficients for the interaction terms are positive and highly significant, showing again that Asian bidders can expect to achieve higher CARs in domestic transactions and in transactions with private targets. The coefficient for *GOV* is negative but not significant. The coefficient for *ΔRESTRICTION* is positive and weakly significant, giving weak evidence that capital markets reward banks for going into jurisdictions where lower restrictions on banking activities apply. Acquiring targets in countries with less restrictive regimes on banking activities potentially offer a bank more growth opportunities and allows for better risk diversification. The sign for the coefficients of *ΔSUPERVISORY* and *ΔTRANSPARENCY* are largely in line with the findings of prior research. Buch and DeLong (2004) show that targets in jurisdictions with higher supervisory power are more attractive. Conversely, bidding banks can expect to achieve lower stock returns when acquiring targets in jurisdictions with lower levels of supervisory power than in their home country. The coefficient for *ΔTRANSPARENCY* is positive, implying that lower transparency requirements in the target country than in the bidding bank's country of origin are associated with positive stock returns. More strictly regulated countries are usually associated with higher compliance costs (Hagendorff et al., 2012). On the other hand, investors most likely expect compliance costs to be lower in countries where less stringent transparency rules apply. Nevertheless, this is merely a trend, as both variables lack in significance. The final model includes all variables. The results remain largely in line with the ones observed in the prior models. The coefficient for the variable *ROE* is now significant, but small and therefore its impact on the achieved CAR appears to be rather limited. The results using the CAR achieved during the [-5;5] day event window as the dependent variable largely confirm the results. However, it is noteworthy that larger transactions are associated with significant reductions in shareholder wealth, a trend that is constant for all regression specifications. In addition, domestic transactions by Asian bidding banks do not significantly influence the returns any longer, but the coefficient for *ASIAN×PRIVTAR* is still highly significant, underscoring that Asian banks acquiring private institutions in the region are most successful. Differences in the regulatory regime, on the other hand, have no effect on the achieved returns.

⁵ All models were checked for collinearity with variance inflation factors. As expected, variance inflation factors are high for the interaction terms and their components, but still below ten, while they are well below five for all other variables, indicating that collinearity should not be an issue in any of the regression models.

Table 6: Regression results for bidding banks

OLS regression results for the observed bidding bank returns in the Asia-Pacific region. This table reports the cross-sectional regression coefficients using company j 's [-1;1] and [-5;5] event window CAR as the dependent variable. *ASIAN* is defined as 1 if the bidding bank is from one of the following countries: China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Singapore, South Korea, Taiwan and Thailand, zero otherwise; *NATIONAL* is defined as 1 if the bidding bank and target bank are from the same country, zero otherwise; *PRIVTAR* defined as 1 if the target bank's public status is private, zero otherwise; *VALUE* is the logarithm of the deal value in US dollars; *FOCUS* is defined as 1 if the bidding and target bank have the same primary SIC code, zero otherwise; *MCAP* is the logarithm of the market capitalization of the bidding bank in US dollars on the last trading days of the year prior to the event; *ROE* is the return on equity of the bidding bank as of December 31st of the year prior to the event. *GOV* is defined as 1 if the bidding bank itself or the ultimate parent of the bidding bank is 50% or more government owned, but the stock still being publicly traded, zero otherwise; *ARESTRICTION* is the difference in the Restriction on Banking Activity Index between bidding bank country of origin and target bank country of origin; *ASUPERVISORY* is the difference in the Official Supervisory Power Index between bidding bank country of origin and target bank country of origin; *ATRANSPARENCY* is the difference in the Financial Statement Transparency Index between bidding bank country of origin and target bank country of origin. The standard errors are corrected for heteroskedasticity and clustering of observations at the bidding bank level and the associated t -values are given in parentheses. *, **, *** denotes statistical significance at the 10%, 5% and 1% level.

Dependent Variable	CAR _[i,-1;1]					CAR _[i,-5;5]				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
δ_0	0.031 (0.744)	0.033 (0.823)	0.131* (1.662)	0.048 (0.889)	0.098 (1.173)	0.174*** (2.753)	0.176*** 2.814	0.330*** (2.696)	0.195** (2.250)	0.313** (2.114)
<i>ASIAN</i>	0.020** (2.327)	-0.011 (-0.905)	-0.015 (-1.179)	-0.025 (-1.401)	-0.026 (-1.423)	0.021** (2.077)	-0.009 -0.594	-0.015 (-0.990)	-0.007 (-0.274)	-0.010 (-0.395)
<i>NATIONAL</i>	0.007 (0.741)	-0.013* (-1.930)	-0.018** (-2.122)	-0.012* (-1.664)	-0.013 (-1.440)	0.000 (0.003)	-0.020* -1.889	-0.028** (-2.531)	-0.013 (-1.082)	-0.017 (-1.355)
<i>PRIVTAR</i>	0.022 (1.382)	-0.040*** (-3.165)	-0.047*** (-3.291)	-0.064*** (-4.350)	-0.067*** (-3.862)	0.009 (0.543)	-0.042* -1.914	-0.053** (-2.288)	-0.074*** (-3.177)	-0.082*** (-3.926)
<i>VALUE</i>	-0.003 (-1.344)	-0.002 (-1.112)	-0.002 (-1.147)	-0.003 (-1.026)	-0.004 (-1.510)	-0.010*** (-3.018)	-0.010*** -2.908	-0.010*** (-3.533)	-0.010** (-2.303)	-0.012*** (-3.226)
<i>FOCUS</i>	0.018** (1.985)	0.016* (1.859)	0.011 (1.290)	0.012 (1.458)	0.008 (0.874)	0.021* (1.792)	0.019 1.616	0.014 (1.160)	0.013 (0.950)	0.009 (0.631)
<i>MCAP</i>			-0.004 (-1.233)		-0.001 (-0.422)			-0.006 (-1.440)		-0.004 (-0.789)
<i>ROE</i>			0.000 (0.649)		0.000** (1.999)			0.000*** (5.520)		0.000*** (4.798)
<i>GOV</i>				-0.015 (-1.044)	-0.017 (-1.124)				-0.012 (-0.412)	-0.016 (-0.605)
<i>ARESTRICTION</i>				0.004* (1.769)	0.003* (1.667)				-0.001 (-0.211)	-0.001 (-0.250)
<i>ASUPERVISORY</i>				-0.002 (-0.710)	-0.002 (-0.744)				-0.000 (-0.093)	-0.001 (-0.131)
<i>ATRANSPARENCY</i>				0.006 (0.895)	0.005 (0.798)				0.007 (0.812)	0.005 (0.554)
<i>ASIAN</i> × <i>NATIONAL</i>		0.037** (2.560)	0.037** (2.377)	0.051*** (2.767)	0.050*** (2.723)		0.038** 1.991	0.040** (2.068)	0.036 (1.300)	0.038 (1.390)
<i>ASIAN</i> × <i>PRIVTAR</i>		0.076*** (3.825)	0.079*** (3.563)	0.081*** (4.587)	0.080*** (4.064)		0.063** 2.260	0.066** (2.298)	0.082*** (2.664)	0.083*** (2.796)
Observations	150	150	140	129	119	150	150	140	129	119
Adjusted. R ²	8.95%	14.74%	14.31%	18.57%	18.43%	7.75%	9.29%	13.16%	6.17%	10.13%
F-Value	3.227***	6.291***	4.356***	8.231***	6.607***	3.968***	5.828***	10.726***	5.774***	9.607***

Overall, the regression analyses allow clear conclusions. Asian bidding banks are, on average, more successful than their non-Asian counterparts, giving further support to hypothesis H1-2. This is especially the case when Asian banks acquire domestic targets and private financial institutions, indicating that market power considerations may indeed play a dominant role. Non-Asian bidding banks appear to have to pay significantly higher premiums in order to compete against local institutions, negatively affecting their stock returns. The ACARs of the targets of Asian and non-Asian bidding banks give further support to this conclusion, as targets of non-Asian bidders enjoy larger ACARs than those of Asian bidders. Regulatory arbitrage considerations, on the other hand, appear to play a very minor role at best when capital markets evaluate M&A transactions.

It should be noted that endogeneity problems are potentially present, as non-Asian banks may not be able to choose from all available targets in Asia. This may be due to non-Asian banks only being willing to acquire targets with sufficient public information on their financial situation and business prospects. These are likely to be comparatively large and publicly listed targets, limiting their possible target options. In addition, it is also possible that governments encourage domestic mergers prior to allowing foreign institutions to enter a market. Only once the domestic banking sector is sufficiently consolidated are foreign competitors allowed to enter the market. This might leave non-Asian banks with a very small pool of available targets to choose from, potentially the least desirable ones.

5.3 Explaining bidding bank rival wealth effects

In order to investigate the drivers of the short-term market performance of the bidding bank rivals surrounding the announcement of an M&A transaction, we test multiple OLS regression models using the rival banks' [-1;1] and [-5;5] day event window CAR as the dependent variable. We focus on the same determinants as for the bidding bank sample, but leave out the variables pertaining to regulatory arbitrage considerations, as they should have no effect on the rival bank performance and are not significant in the prior analyses. Instead, we add the variables $\Delta MCAP$ and ΔROE to account for differences in the size and profitability between the rival and bidding bank.

Table 7 presents the OLS regression results for the bidding bank rivals. The coefficient for *NATIONAL* is positive and significant, indicating that the increase in the value of the bidding bank rivals stems mostly from national takeovers within the banking sector. The coefficient for *ASIAN*, on the other hand, is only weakly significant at best, indicating that national rather than regional consolidation is the dominant driver of gains to rival banks. This can be interpreted as further evidence that market power considerations are an important factor when investors value Asian bank M&As. The difference between rival and bidding bank ROE appears to play a minor role as the coefficient of ΔROE is only significant when using the rival bank's [-1;1] event window CAR as the dependent

variable. The coefficient is relatively small and negative and indicates that a merger has a negative impact on the rival banks profitability.

Table 7: Regression results for bidding bank rivals

OLS regression results for the observed bidding bank rival returns in the Asia-Pacific region. This table reports the cross-sectional regression coefficients using rival company j 's [-1;1] and [-5;5] event window CAR as the dependent variable. *ASIAN* is defined 1 if the bidding bank is from one of the following countries: China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Singapore, South Korea, Taiwan and Thailand, zero otherwise; *NATIONAL* is defined as 1 if the bidding bank and target bank are from the same country, zero otherwise; *PRIVTAR* defined as 1 if the target bank's public status is private, zero otherwise; *VALUE* is the logarithm of the deal value in in US dollars; *FOCUS* is defined as 1 if the bidding and target bank have the same primary SIC code, zero otherwise; *GOV* is defined as 1 if the bidding bank itself or the ultimate parent of the bidding bank is 50% or more government owned, but the stock still being publicly traded, zero otherwise; Δ *MCAP* is the logarithm of the absolute value of the difference in market capitalization of bidding and rival bank in in US dollars on the last trading day of the year prior to the event; Δ *ROE* is the difference in the return on equity between the rival and bidding bank as of December 31st of the year prior to the event. The standard errors are corrected for heteroskedasticity and clustering of observations at the bidding bank rival level and the associated t -values are given in parentheses. *, **, *** denotes statistical significance at the 10%, 5% and 1% level.

Dependent Variable	CAR _[i,-1;1]				CAR _[i,-5;5]			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
δ_0	-0.027 (-0.868)	-0.029 (-0.916)	-0.022 (-0.753)	-0.024 (-0.795)	-0.088** (-2.231)	-0.086** (-2.190)	-0.082* (-1.885)	-0.077* (-1.779)
<i>ASIAN</i>	0.002 (0.365)	-0.006 (-0.680)	0.001 (0.244)	-0.004 (-0.464)	0.013* (1.821)	0.018 (1.563)	0.012 (1.631)	0.020* (1.673)
<i>NATIONAL</i>	0.013*** (2.652)	0.008 (1.467)	0.014*** (3.104)	0.011** (2.019)	0.013* (1.767)	0.021*** (2.745)	0.014* (1.899)	0.024*** (2.992)
<i>PRIVTAR</i>	0.004 (0.699)	-0.006 (-0.769)	0.004 (0.748)	0.001 (0.153)	0.016 (1.526)	-0.014 (-0.976)	0.018* (1.673)	-0.007 (-0.413)
<i>VALUE</i>	0.001 (0.570)	0.001 (0.736)	0.000 (-0.178)	0.000 (-0.034)	0.000 (0.117)	0.000 (0.164)	-0.001 (-0.282)	-0.001 (-0.359)
<i>FOCUS</i>	-0.004 (-0.993)	-0.004 (-1.104)	-0.002 (-0.403)	-0.002 (-0.442)	-0.002 (-0.357)	-0.004 (-0.590)	-0.002 (-0.302)	-0.003 (-0.469)
<i>GOV</i>	0.011 (1.319)	0.014 (1.553)	0.009 (1.048)	0.011 (1.198)	0.032** (2.090)	0.031* (1.896)	0.031* (1.970)	0.028* (1.711)
Δ <i>MCAP</i>	0.000 (0.340)	0.000 (0.328)	0.001 (0.859)	0.001 (0.862)	0.003** (2.019)	0.003* (1.915)	0.004** (2.152)	0.003** (2.061)
Δ <i>ROE</i>			-0.000*** (-3.788)	-0.000*** (-3.755)			0.000 (-0.509)	0.000 (-0.507)
<i>ASIAN</i> × <i>NATIONAL</i>		0.010 (1.103)		0.008 (0.871)		-0.017 (-1.289)		-0.019 (-1.419)
<i>ASIAN</i> × <i>PRIVTAR</i>		0.012 (1.291)		0.004 (0.475)		0.036* (1.950)		0.029 (1.442)
Observations	420	420	381	381	420	420	381	381
Adjusted. R^2	1.78%	1.81%	4.81%	4.52%	2.66%	3.13%	2.77%	3.02%
F -Value	2.253**	2.106**	3.589***	2.911***	2.329**	2.323**	1.903*	1.918**

Using a rival bank's [-5;5] event window CAR as the dependent variable, the coefficients for *GOV* and Δ *MCAP* are positive and significant. The significance of the coefficient for *GOV* may indicate a government's desire to further consolidate the national banking sector, which will likely benefit the remaining institutions in the market. The significance of the coefficient for Δ *MCAP*, on the other hand, indicates that rival banks, which are smaller or larger than the bidding bank, stand to gain more from an M&A transaction. Similarly sized banks may have missed an opportunity to acquire another company and possibly face increased regulatory scrutiny if they wish to engage in a takeover themselves. Other variables, such as *FOCUS* and *VALUE* do not seem to determine the short-term performance of the rival banks returns. The interaction terms *ASIAN*×*NATIONAL* and *ASIAN*×*PRIVTAR* do not help to explain much of the variation in the observed results rival banks' CARs. Overall, this still gives partial support to hypothesis 2-1, but the gains to rival banks appear to be largely driven by a national rather than a regional consolidation processes.

Looking at the results of the bidding bank rivals in conjunction with those of the bidding banks, it can be seen that the geographic origin of the bidding bank has an important influence on the observed return patterns. Asian bidders perform significantly better than their non-Asian peers. The regression results of the rival returns suggest that bidders stand to gain most from national acquisitions. This can be interpreted as evidence that market power considerations are one of the drivers of the observed return patterns. As suggested by the significance of the coefficient of $\Delta MCAP$, particularly institutions that are smaller or larger than the bidding bank, stand to gain most from mergers and potentially lower levels of competition.

6. ROBUSTNESS CHECKS

6.1 Difference in time periods

In order to check whether our results are robust to different time periods, we split our sample into the time periods from 1995-2004 and 2005-2013. Dividing the sample into these two periods is particularly useful, as the first one covers the 1997 Asian Financial Crisis and its aftermath, while the second one includes the more recent 2007 Financial Crisis. This yields two comparable sample sizes where the respective number of bidding banks in each sample is 68 and 82. In addition, these two subsamples are again divided into those for non-Asian and Asian bidders. The results of the analysis are presented in Table 8.

Table 8: Event study results for bidding banks 1995-2004 and 2005-2013

Stock market reaction of bidding banks to M&A announcements in the Asia-Pacific region. This table reports the cumulated abnormal returns estimated for bidding banks over multiple event windows for bank mergers in the Asia-Pacific region between 1995 and 2013, split into the two subperiods from 1995-2004 and 2005-2013. Daily abnormal returns are obtained using the market model with an EGARCH (1,1) specification and a 252 trading day estimation period. The respective Datastream country index of the bidding bank's country of origin is used as the market portfolio. Average cumulative abnormal returns are tested for statistical significance using the parametric Boehmer et al. (1991) test procedure and the nonparametric rank test first introduced by Corrado (1989). The results for non-Asian and Asian bidding banks for the time period 1995-2004 and 2005-2013 are presented separately. In order to test whether statistically significant differences exist between the two time periods, the parametric two-sample t -test and the nonparametric Wilcoxon rank-sum test are used. Significant results for the parametric difference test are indicated next to $\Delta ACAR$, while significance for the nonparametric test are indicated next to $\Delta Median CAR$. *, **, *** denotes statistical significance at the 10%, 5% and 1% level.

Event window	ACAR	Median CAR	BMP-test (Z-score)	Corrado-test (Z-score)	ACAR	Median CAR	BMP-test (Z-score)	Corrado-test (Z-score)	$\Delta ACAR$	$\Delta Median CAR$
All bidding banks 1995-2004 (n=68)				All bidding banks 2005-2013 (n=82)				Difference		
[-5;5]	0.57%	-0.13%	-0.151	0.326	1.63%	0.97%	0.816	0.833	-1.06%	-1.10%
[-1;1]	0.78%	0.44%	0.476	1.143	1.15%	0.44%	0.896	0.824	-0.37%	-0.01%
[0]	0.53%	0.16%	0.172	1.066	0.40%	-0.02%	0.805	0.739	0.13%	0.18%
[-1;0]	0.65%	-0.11%	0.378	0.552	0.65%	0.19%	1.155	1.144	0.00%	-0.30%
[0;1]	0.66%	0.47%	0.273	1.602	0.91%	0.11%	0.522	0.388	-0.24%	0.36%
Non-Asian bidding banks 1995-2004 (n=30)				Non-Asian bidding bank 2005-2013 (n=24)				Difference		
[-5;5]	-0.93%	-0.51%	-1.236	-0.457	1.09%	0.77%	0.108	0.652	-2.02%	-1.27%
[-1;1]	-0.58%	-0.10%	-1.318	-0.647	-0.60%	-0.41%	-1.310	-1.239	0.02%	0.32%
[0]	-0.62%	-0.59%	-1.716*	-1.458	-0.12%	-0.02%	-0.614	-0.770	-0.50%	-0.56%
[-1;0]	-0.93%	-0.57%	-2.066**	-1.850*	-0.10%	-0.12%	-0.120	-0.326	-0.83%	-0.46%
[0;1]	-0.26%	0.09%	-1.033	0.027	-0.61%	-0.14%	-2.143**	-1.736*	0.35%	0.23%
Asian bidding banks 1995-2004 (n=38)				Non-Asian bidding bank 2005-2013 (n=58)				Difference		
[-5;5]	1.76%	0.53%	1.063	0.891	1.86%	1.11%	0.926	0.599	-0.10%	-0.58%
[-1;1]	1.86%	1.54%	2.216**	2.216**	1.88%	0.65%	1.615	1.807*	-0.02%	0.89%
[0]	1.44%	0.71%	2.803***	2.878***	0.62%	0.07%	1.411	1.400	0.82%	0.64%
[-1;0]	1.91%	0.66%	2.610***	2.530**	0.97%	0.45%	1.541	1.609	0.94%	0.21%
[0;1]	1.39%	1.45%	1.680*	2.219**	1.53%	0.60%	1.415	1.593	-0.14%	0.85%

The overall results show no significance for the investigated event windows for both, the 1995-2004 and the 2005-2013 time period. This is in line with the results observed for the entire sample of bidding banks (see also Table 4). In addition, the results of the two time periods are not significantly different from each other. The results therefore appear to be robust over time. Splitting the samples of these two time periods into non-Asian and Asian bidding bank subsamples leads to similar results. There is no significant difference between the different time periods between those subgroups. However, the significant positive effects for Asian bidding banks are more pronounced in the time period 1995-2004 than 2005-2013. Nonetheless, the differences between the results of these two time periods are not significant (see Table 8)

6.2 Sensitivity analysis of the rival reaction

The rival selection process for the sensitivity analysis follows the same procedure as the one described in Section 3.2. However, instead of choosing the top three rivals by market capitalization, the top five rivals are chosen. We are able to identify five suitable rivals for 126 bidders out of our sample of 150 bidding banks, giving us a total of 630 rival observation. The reduction in sample size in comparison to the prior analysis is due to fewer firms having five rivals. This is owed to the restriction that the rivals have to have the same nationality as the bidder.⁶

Table 9 gives the results for the entire sample of the top five rivals. The results confirm those of the top three rival analysis. The rivals experience largely insignificant gains, with an overall trend to positive one. It therefore appears as if the overall reactions previously observed are robust, even when increasing the number of potential rivals. Table 9 also splits the sample into the rivals of Asian and non-Asian bidders. This also largely confirms the results of the top three rival analysis presented in Table 4, albeit at generally lower levels of significance. Non-Asian bidders experience some slight losses, but these losses lack significance for all event windows. Asian bidders, on the other hand, still experience significant gains during the entire [-5;5] day event window and weakly significant ones during the [-1;0] event window. The analysis of the difference in returns to non-Asian and Asian bidding bank rivals still suggests that non-Asian bidding bank rivals perform significantly worse than their Asian peers.

Overall, the results are less significant, but still support those achieved by the top three rival investigation. The lower levels of significance are most likely due to the fewer observations in regard to the M&A events, as only 126 M&A instead of 140 can be investigated. Moreover, the top five national

⁶ An analysis of the targets is not conducted, as almost none have five direct rivals from the same country, resulting in a very small sample size that would not lead to meaningful insights.

rivals are a more heterogeneous group than the top three rivals, as size differentials in market capitalization in regard to the bidder are higher. The larger the size differential, the lower the actual competition might be between the bidder and its rivals.

Table 9: Event study results for top five bidding bank rivals

Stock market reaction of the top five bidding bank rivals to M&A announcements in the Asia-Pacific region. This table reports the cumulated abnormal returns estimated for the top 5 bidding bank rivals over multiple event windows for bank mergers in the Asia-Pacific region between 1995 and 2013. Daily abnormal returns are obtained using the market model with an EGARCH (1,1) specification and a 252 trading day estimation period. The respective Datastream country index of the bidding bank's country of origin is used as the market portfolio. Rivals are selected using the following approach: (i) the bidding bank rivals need to be domiciled in the same country as the bidder and need to be listed on a stock exchange, (ii) the first two digits of the primary SIC code of the bidder need to match with those of its rival, and (iii) the five closest rival firms, as measured by market capitalization, are selected. All observations that did not yield at least five rivals are dropped. Average cumulative abnormal returns are tested for statistical significance using the parametric Boehmer et al. (1991) test procedure and the nonparametric rank test first introduced by Corrado (1989). The results for non-Asian and Asian bidding bank rivals are presented separately. In order to test whether statistically significant differences exist between the non-Asian and Asian bidding bank rival subsamples, the parametric two-sample *t*-test and the nonparametric Wilcoxon rank-sum test are used. *, **, *** denotes statistical significance at the 10%, 5% and 1% level.

Event window	ACAR	Median CAR	BMP-test (Z-score)	Corrado-test (Z-score)
All bidding bank rivals (n=630)				
[-5;5]	0.59%	0.04%	0.724	0.505
[-1;1]	0.12%	0.11%	1.162	1.238
[0]	-0.02%	0.00%	0.407	0.958
[-1;0]	0.09%	-0.08%	1.066	1.458
[0;1]	0.01%	0.01%	0.526	0.735
Non-Asian bidding bank rivals (n=215)				
[-5;5]	-0.48%	0.02%	-1.224	-0.258
[-1;1]	-0.17%	-0.10%	-0.236	-0.012
[0]	-0.33%	0.04%	-0.654	0.668
[-1;0]	-0.35%	-0.02%	-0.389	0.383
[0;1]	-0.15%	-0.14%	-0.456	0.075
Asian bidding bank rivals (n=415)				
[-5;5]	1.14%	0.05%	2.093**	0.790
[-1;1]	0.26%	0.38%	1.620	1.512
[0]	0.14%	-0.05%	1.303	0.707
[-1;0]	0.31%	-0.11%	1.843*	1.510
[0;1]	0.09%	0.15%	1.022	0.842
Event window	Δ ACAR	Δ Median CAR	two-sample <i>t</i> -test (<i>t</i> -value)	Wilcoxon rank-sum test (Z-score)
Difference non-Asian and Asian bidding bank rivals				
[-5;5]	-1.62%	-0.03%	-2.638***	-1.408
[-1;1]	-0.43%	-0.48%	-1.185	-1.435
[0]	-0.47%	0.09%	-1.667*	0.057
[-1;0]	-0.66%	0.09%	-1.812*	0.320
[0;1]	-0.24%	-0.29%	-0.796	-1.402

6.3 Median regression on the short-term performance of bidding banks

As a robustness check for the results of our OLS regression we perform a nonparametric median regression. The advantage of the median regression over the standard OLS regression is its robustness in regard to outliers. We prefer using a median regression to winsorizing our results, as this leaves us with more observations, allowing us to get more detailed insights into our results and to draw clearer conclusions in regard to the overall sample. We perform the median regression using the same model

specifications as for the OLS regressions in Table 6, but only with [-1;1] as the dependent variable. The results are presented in Table 10.

Table 10: Median regression results for bidding banks

Median regression results for the observed bidding bank returns in the Asia-Pacific region. This table reports the regression coefficients using of company j 's [-1;1] event window CAR as the dependent variable. *ASIAN* is defined 1 if the bidding bank is from one of the following countries: China, Hong Kong, India, Indonesia, Japan, Malaysia, Pakistan, Philippines, Singapore, South Korea, Taiwan and Thailand, zero otherwise; *NATIONAL* is defined as 1 if the bidding bank and target bank are from the same country, zero otherwise; *PRIVTAR* defined as 1 if the target bank's public status is private, zero otherwise; *VALUE* is the logarithm of the deal value in in US dollars; *FOCUS* is defined as 1 if the bidding and target bank have the same primary SIC code, zero otherwise; *MCAP* is the logarithm of the market capitalization of the bidding bank in US dollars on the last trading days of the year prior to the event; *ROE* is the return on equity of the bidding bank as of December 31st of the year prior to the event. *GOV* is defined as 1 if the bidding bank itself or the ultimate parent of the bidding bank is 50% or more government owned, but the stock still being publicly traded, zero otherwise; Δ *RESTRICTION* is the difference in the Restriction on Banking Activity Index between bidding bank country of origin and target bank country of origin; Δ *SUPERVISORY* is the difference in the Official Supervisory Power Index between bidding bank country of origin and target bank country of origin; Δ *TRANSPARENCY* is the difference in the Financial Statement Transparency Index between bidding bank country of origin and target bank country of origin. The coefficient covariances are computed using the robust Huber Sandwich method and associated t -values are given in parentheses. *, **, *** denotes statistical significance at the 10%, 5% and 1% level.

	Model 1	Model 2	Model 3	Model 4	Model 5
δ_0	0.069 (1.628)	0.066 (1.491)	0.186** (2.082)	0.086 (1.415)	0.143 (1.311)
<i>ASIAN</i>	0.020** (2.014)	0.003 (0.151)	-0.009 (-0.383)	-0.011 (-0.489)	-0.018 (-0.721)
<i>NATIONAL</i>	-0.001 (-0.107)	-0.007 (-0.652)	-0.012 (-0.932)	-0.001 (-0.038)	-0.012 (-0.740)
<i>PRIVTAR</i>	0.007 (0.550)	-0.029* (-1.664)	-0.030* (-1.670)	-0.053* (-1.750)	-0.048 (-1.570)
<i>VALUE</i>	-0.004** (-1.982)	-0.004* (-1.672)	-0.005** (-2.344)	-0.005 (-1.653)	-0.005* (-1.981)
<i>FOCUS</i>	0.010 (1.229)	0.010 (1.374)	0.004 (0.422)	0.012 (1.343)	0.012 (1.189)
<i>MCAP</i>			-0.004 (-1.124)		-0.002 (-0.510)
<i>ROE</i>			-0.000 (-1.160)		-0.000 (-0.352)
<i>GOV</i>				-0.026 (-1.557)	-0.030* (-1.748)
Δ <i>RESTRICTION</i>				0.002 (0.690)	0.002 (0.671)
Δ <i>SUPERVISORY</i>				-0.003 (-1.018)	-0.003 (-1.162)
Δ <i>TRANSPARENCY</i>				-0.007 (-0.701)	-0.010 (-1.014)
<i>ASIAN</i> × <i>NATIONAL</i>		0.016 (0.783)	0.023 (0.907)	0.029 (1.134)	0.041 (1.487)
<i>ASIAN</i> × <i>PRIVTAR</i>		0.047** (2.302)	0.049** (2.104)	0.064* (1.973)	0.056* (1.667)
Observations	150	150	140	129	119
Pseudo R^2	5.76%	8.82%	10.81%	13.60%	15.45%
Quasi-LR statistic	13.223**	21.086***	23.209***	25.179***	26.300**

The coefficient for *ASIAN* is positive and significant in Model 1, the basic model specification, again showing that Asian bidding banks perform better than their non-Asian counterparts. The coefficient for *FOCUS* ceases to be significant, while the negative coefficient for *VALUE* becomes significant in the median regression. This is in line with the results of the OLS regression using the [-5;5] event window CAR as the dependent variable. The median regression confirms that deal size is also of importance when explaining the returns achieved during the [-1;1] day event window. Adding the

interaction terms shows that the results for $ASIAN \times PRIVTAR$ are more robust than those for $ASIAN \times NATIONAL$, again in line with the OLS regression using the $[-5;5]$ day CAR as the dependent variable. Asian bidding banks acquiring private targets perform significantly better than their peers. National acquisitions by Asian banks, on the other hand, cease to be significant. Nevertheless, in line with expectations, the coefficient is still positive in all regression specifications.

Models 4 and 5 again introduce the regulatory variables $\Delta RESTRICTION$, $\Delta SUPERVISORY$ and $\Delta TRANSPARENCY$. The coefficients for the variables are mostly non-significant in the OLS regression specifications and are not significant in the median regression specifications, but still add to the overall explanatory power of the models. This clearly suggests that if regulatory arbitrage considerations played a role for bidding banks when engaging in M&As in the Asia-Pacific region, it was of minor importance to the bidding banks' shareholders. Nonetheless, the coefficient for GOV is negative and weakly significant in the full model specification. This gives further support to the interpretation that government involvement on the side of the bidding banks is seen critical by shareholders, as political considerations, rather than economic ones, are possibly the dominating motivations behind the M&A transaction.

Overall, the results of the median regression have lower levels of significance than the ones of the OLS regression, but still largely confirm the OLS regression results, especially those using $CAR_{j,[-5;5]}$ as the dependent variable. Nonetheless, the results of the median regression reveal that regulatory arbitrage considerations have no effect on the stock returns surrounding bank M&As in the Asia-Pacific region. In addition, national and focusing transactions do not necessarily lead to significantly better results for the bidding bank, even though the coefficients still have the expected sign. M&A transactions by Asian bidding banks with private targets appear to be the main driver of the observed positive abnormal returns. Furthermore, the detrimental effect of large transactions to bidding banks' shareholders is confirmed.

7. SUMMARY AND CONCLUSION

We investigate the industry wide shareholder wealth effects of bidders, targets, and their closest rivals surrounding the official announcement of bank M&As in the Asia-Pacific region between 1995 and 2013. The sample is composed of 150 international merger transaction in the region. Our overall results show that bidding banks receive positive, but non-significant stock returns, while targets enjoy large, highly significant and positive returns on the announcement day and during the surrounding days, a result which stands in stark contrast to the majority of the prior literature on bank mergers. However, when we divide the sample into Asian and non-Asian bidding banks the results show that shareholders of Asian bidding banks can expect to earn significant positive abnormal returns during the three days surrounding the announcement. In contrast, shareholders of non-Asian bidding banks

only realize small, negative returns. The targets of Asian and non-Asian bidding banks display different capital market reactions as well: targets of non-Asian bidders receive much higher returns than those of Asian ones. In fact, the difference amounts to approximately six percentage points during the eleven day event window surrounding the announcement.

The results of the rival analysis show that the rivals of Asian bidding banks can expect to earn positive returns surrounding the announcement, while the returns to rivals of non-Asian bidders remain insignificant. The positive returns of the Asian bidding banks in conjunction with the positive returns earned by their rivals suggests that market power considerations potentially play an important role when capital markets value these transactions. The decision by a non-Asian institution to acquire an institution in Asia, on the other hand, has little effect on the bidder's domestic market. However, the rivals of targets of non-Asian bidders receive significant and positive returns, while the rivals of targets of Asian bidders receive only slightly significant and considerably lower positive returns. This results suggests that the rivals of targets of non-Asian financial institutions profit from an increased acquisition probability.

The results of the multivariate regression analysis show that the most successful bidding banks are Asian bidders purchasing private financial institutions. Non-Asian banks, on the other hand, perform significantly worse and actually destroy shareholder value, particularly when purchasing non-private targets, most likely because they need to pay significantly higher premiums when they compete with local institutions for attractive targets. The results of the analysis of the target bank returns corroborate this interpretation. We do not find robust evidence that regulatory arbitrage considerations are a dominant factor when capital markets value an M&A transaction in the Asia-Pacific region.

Overall, the return patterns of acquiring banks and their rivals suggest that market power considerations play an important role when markets value mergers among Asian financial institutions, as both the bidding banks and its rivals achieve positive returns. The analysis of the short-term performance of the bidding banks' rivals' returns even suggest that market power considerations are more prevalent in national mergers than in Asian regional ones. The same consideration does not seem to play a role when markets evaluate M&As by non-Asian institutions. In this case, the targets of non-Asian bidders and their closest rivals appear to be the major beneficiaries, as both can expect to earn large and highly significant returns surrounding the announcement of a transaction. This result is in line with the Acquisition Probability Hypothesis. There are fewer remaining acquisition targets for other potential bidders, driving up the valuation of the remaining institutions. In addition, the M&A announcement can also be seen as a strong signal to markets in regard to the positive economic situation in the industry and the presence of growth and profit opportunities. That bidding banks gain significant positive stock returns when undertaking M&A transactions is in stark contrast to prior empirical research on bank M&As. However, previous studies primarily focused on the advanced and largely

consolidated financial markets of the US and Western Europe (e.g. Becher, 2000; Beitel et al., 2004; Hankir et al., 2011). In the Asia-Pacific region further consolidation by local institutions benefits bidding banks and their rivals as capital markets appear to see considerable advantages for these institutions due to an increase in their market power.

ACKNOWLEDGEMENTS

We would like to thank Mark Mietzner, Robert Chirinko, and the participants of the M&A in the Asia-Pacific Region session at the 64th Annual meeting of the Midwest Finance Association on 4-7 March 2015 in Chicago for their helpful comments and suggestions. All remaining error are our own.

REFERENCES

- Akhavein, J. D., Berger, A. N., & Humphrey, D. B. (1997). The effects of megamergers on efficiency and prices: evidence from a bank profit function. *Review of Industrial Organization*, 12(1), 95-139.
- Akhigbe, A., & Madura, J. (1999). The industry effects regarding the probability of takeovers. *Financial Review*, 34(3), 1-17.
- Akhigbe, A., & Martin, A. D. (2000). Information-signaling and competitive effects of foreign acquisitions in the US. *Journal of Banking & Finance*, 24(8), 1307-1321.
- Barth, J. R., Caprio, G., & Levine, R. (2004). Bank regulation and supervision: what works best? *Journal of Financial Intermediation*, 13(2), 205-248.
- Barth, J. R., Caprio, G., & Levine, R. (2005). *Rethinking bank regulation: till angels govern*. Cambridge: Cambridge University Press.
- Barth, J. R., Caprio, G., & Levine, R. (2008). *Bank regulations are changing: for better or worse?* . World Bank Policy Research Working Paper, (4646).
- Barth, J. R., Caprio, G., & Levine, R. (2012). *The evolution and impact of bank regulations*. World Bank Policy Research Working Paper, (6288).
- Becher, D. A. (2000). The valuation effects of bank mergers. *Journal of Corporate Finance*, 6(2), 189-214.
- Becher, D. A., & Campbell, T. L. (2005). Interstate banking deregulation and the changing nature of bank mergers. *Journal of Financial Research*, 28(1), 1-20.
- Beitel, P., Schiereck, D., & Wahrenburg, M. (2004). Explaining M&A success in European banks. *European Financial Management*, 10(1), 109-139.
- Bekaerta, G., & Harvey, C. R. (1997). Emerging equity market volatility. *Journal of Financial Economics*, 43(1), 29-77.
- Berger, A. N., Demsetz, R. S., & Strahan, P. E. (1999). The consolidation of the financial services industry: causes, consequences, and implications for the future. *Journal of Banking & Finance*, 23(2-4), 135-194.
- Berger, A. N., Goldberg, L. G., & White, L. J. (2001). The effects of dynamic changes in bank competition on the supply of small business credit. *European Finance Review*, 5(1-2), 115-139.
- Boehmer, E., Musumeci, J., & Poulson, A. B. (1991). Event-study methodology under conditions of event-induced variance. *Journal of Financial Economics*, 30(2), 253-272.
- Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics*, 31(1), 307-327.

- Brockett, P. L., Chen, H.-M., & Garven, J. R. (1999). A new stochastically flexible event methodology with application to Proposition 103. *Insurance: Mathematics and Economics*, 25(12), 197-217.
- Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14(1), 3-31.
- Buch, C. M., & DeLong, G. L. (2004). Cross-border bank mergers: what lures the rare animal? . *Journal of Banking & Finance*, 28(9), 2077-2102.
- Campa, J. M., & Hernando, I. (2004). Shareholder value creation in European M&As. *European Financial Management*, 10(1), 47-81.
- Campbell, C. J., Cowan, A. R., & Salotti, V. (2010). Multi-country event-study methods. *Journal of Banking & Finance*, 34(12), 3078-3090.
- Carbo-Valverde, S., Kane, E. J., & Rodriguez-Fernandez, F. (2012). Regulatory arbitrage in cross-border banking mergers within the EU. *Journal of Money, Credit and Banking*, 44(8), 1609-1629.
- Claessens, S., Demirgüç-Kunt, A., & Huizinga, H. P. (2001). How does foreign entry affect domestic banking markets? *Journal of Banking & Finance*, 25(5), 891-911.
- Cornett, M. M., McNutt, J. J., & Tehranian, H. (2006). Performance changes around bank mergers: revenue enhancements versus cost reductions. *Journal of Money, Credit and Banking*, 38(4), 1013-1050.
- Corrado, C. J. (1989). A nonparametric test for abnormal security-price performance in event studies. *Journal of Financial Economics*, 23(2), 385-395.
- Corrado, C. J., & Truong, C. (2008). Conducting event studies with Asia-Pacific security market data. *Pacific-Basin Finance Journal*, 16(5), 493-521.
- Corrado, C. J., & Zivney, T. L. (1992). The specification and power of the sign test in event study hypothesis tests using daily stock returns. *Journal of Financial and Quantitative Analysis*, 27(3), 465-478.
- Cowan, A. R. (1993). Tests for cumulative abnormal returns over long periods: simulation evidence. *International Review of Financial Analysis*, 2(1), 51-68.
- Crouzille, C., Lepetit, L., & Bautista, C. (2008). How did the Asian stock markets react to bank mergers after the 1997 Financial Crisis? *Pacific Economic Review*, 13(2), 171-182.
- Cybo-Ottone, A., & Murgia, M. (2000). Mergers and shareholder wealth in European banking. *Journal of Banking & Finance*, 24(6), 831-859.
- DeLong, G. L. (2001). Stockholder gains from focusing versus diversifying bank mergers. *Journal of Financial Economics*, 59(2), 221-252.
- DeYoung, R., Evanoff, D. D., & Molyneux, P. (2009). Mergers and acquisitions of financial institutions: a review of the post-2000 literature. *Journal of Financial Services Research*, 36(2-3), 87-110.
- Dodd, P., & Warner, J. B. (1983). On corporate governance: A study of proxy contests. *Journal of Financial Economics*, 11(1-4), 401-438.
- Eckbo, B. E. (1983). Horizontal mergers, collusion, and stockholder wealth. *Journal of Financial Economics*, 11(1-4), 241-273.
- Eckbo, B. E. (1985). Mergers and the market concentration doctrine: evidence from the capital market. *The Journal of Business*, 58(3), 325-349.
- Eckbo, B. E. (1992). Mergers and the value of antitrust deterrence. *The Journal of Finance*, 47(3), 1005-1029.
- Elyasiani, E., & Mansur, I. (1998). Sensitivity of the bank stock returns distribution to changes in the level and volatility of interest rate: A GARCH-M model. *Journal of Banking & Finance*, 22(5), 535-563.
- Engle, R. F., & Ng, V. K. (1993). Measuring and testing the impact of news on volatility. *The Journal of Finance*, 48(5), 1749-1778.
- Fuller, K., Netter, J., & Stegemoller, M. (2002). What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *The Journal of Finance*, 57(4), 1763-1793.

- Goddard, J., Molyneux, P., & Zhou, T. (2012). Bank mergers and acquisitions in emerging markets: evidence from Asia and Latin America. *The European Journal of Finance*, 18(5), 419-438.
- Hagendorff, J., Hernando, I., Nieto, M. J., & Wall, L. D. (2012). What do premiums paid for bank M&As reflect? The case of the European Union. *Journal of Banking & Finance*, 36(3), 749-759.
- Hankir, Y., Rauch, C., & Ueber, M. P. (2011). Bank M&A: A market power story? *Journal of Banking & Finance*, 35(9), 2341-2354.
- Houston, J. F., Lin, C., & Ma, Y. (2012). Regulatory arbitrage and international bank flows. *The Journal of Finance*, 67(5), 1845-1895.
- Houston, J. F., & Ryngaert, M. D. (1994). The overall gains from large bank mergers. *Journal of Banking & Finance*, 18(6), 1155-1176.
- Kiyamaz, H. (2004). Cross-border acquisitions of US financial institutions: Impact of macroeconomic factors. *Journal of Banking & Finance*, 28(6), 1413-1439.
- Klomp, J., & de Haan, J. (2012). Banking risk and regulation: does one size fit all? *Journal of Banking & Finance*, 36(12), 3197-3212.
- Kolaric, S., & Schiereck, D. (2013). Shareholder wealth effects of bank mergers and acquisitions in Latin America. *Management Research: The Journal of the Iberoamerican Academy of Management*, 11(2), 157-177.
- Kolaric, S., & Schiereck, D. (2014). Performance of bank mergers and acquisitions: a review of the recent empirical evidence. *Management Review Quarterly*, 64(1), 39-71.
- Mikkelson, W. H., & Partch, M. M. (1988). Withdrawn security offerings. *The Journal of Financial and Quantitative Analysis*, 23(2), 119-133.
- Nelson, D. B. (1991). Conditional heteroskedasticity in asset returns: A new approach. *Econometrica*, 59(2), 347-370.
- Otchere, I., & Ip, E. (2006). Intra-industry effects of completed and cancelled cross border acquisitions in Australia: a test of the acquisition probability hypothesis. *Pacific-Basin Finance Journal*, 14(2), 209-230.
- Schwert, G. W., & Seguin, P. J. (1990). Heteroskedasticity in stock returns. *The Journal of Finance*, 45(4), 1129-1155.
- Song, M. H., & Walkling, R. A. (2000). Abnormal returns to rivals of acquisition targets: a test of the 'acquisition probability hypothesis'. *Journal of Financial Economics*, 55(2), 143-171.
- Stillman, R. (1983). Examining antitrust policy towards horizontal mergers. *Journal of Financial Economics*, 11(1-4), 225-240.
- Waheed, A., & Mathur, I. (1995). Wealth effects of foreign expansion by U.S. banks. *Journal of Banking & Finance*, 19(5), 823-842.
- Yu, I.-W., Fung, K.-P., & Tam, C.-S. (2010). Assessing financial market integration in Asia – Equity markets. *Journal of Banking & Finance*, 34(12), 2874-2885.