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Abstract

Using comprehensive data on banks' M&A arrangements in Asia-Pacific countries from 2000 to 2014, we investigate differing performance effects based on the types of foreign institutional investors from the perspective of the acquirer bank's M&A strategies. Measured by the simple Q ratio, our results indicate that acquirer bank's future prospects in Asia-Pacific countries increase three years following the completion of M&A deals when the foreign institutional investors' is a bank type and has high equity stakes in the acquirer. In addition, acquirer banks' loan ratios are found to significantly increase without an accompanying increase in nonperforming loans when held by a bank type foreign investor. Moreover, banks' incomes from other fee-based businesses increase. By contrast, when an investment advisor or fund type of foreign institutional investors have high equity stakes, acquirer banks failed to expand core businesses in the long run, although some success is made in cost reduction in the short run. These results indicate that bank type foreign investors contribute to acquirer banks' future performance through influential advisory functions in the opaque banking industry of Asia.

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Do foreign bank investors promote acquiring banks' value in Asia–Pacific Countries?

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Abstract

We use comprehensive data on banks' merger and acquisition (M&A) arrangements in Asia–Pacific countries to investigate performance effects based on the different types of foreign institutional investors from the perspective of the acquiring bank's M&A strategy. We find that acquiring banks' prospects and loan ratios in Asia–Pacific countries increase in the three years following the completion of M&A deals when the foreign institutional investor is a bank and has high equity stakes in the acquirer. In contrast, when investment advisors or fund-type foreign institutional investors have high equity stakes, we find that acquiring banks fail to expand their core business in the long run, although some success is made in reducing costs in the short run. These results indicate that bank-type foreign investors contribute to acquiring banks' future performance through influential advisory functions in Asia's opaque banking industry.

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Keywords: Mergers and acquisitions; Foreign bank investors; Acquiring banks

JEL Classification Codes: G01; G21; G34

1. INTRODUCTION

Mergers and acquisitions (M&As) are crucial aspect of global investment. In this study, we focus on M&A deals in the banking sector in Asia–Pacific countries. In recent years, banking has been classified as the most active sector in M&As in terms of volume and accounts for about 16% of global M&A activities (Ben Slama et al., 2012). We note that few studies focused on bank M&As in Asia–Pacific countries, although many studies have focused on bank M&As in Europe and the United States (US). As Asia–Pacific countries are among the most rapidly growing economies, investigating the region's bank M&As.

Foreign institutional investors have also become more influential in the past two decades and are now considered sophisticated investors in banking. Foreign institutional investors collaboratively advance superior "import" governance for M&A partners. Foreign investors also have a crucial influence in engaging management as they are independent and have fewer conflicts with investee companies. They have greater international diversification and find it easier to reinvest in other high-yielding countries (Ferreira & Matos, 2008).

In Asia–Pacific countries, some investors have a bias as members of a corporate group, such as a *zaibatsu* (company syndicate) or a family enterprise. Assessing and determining whether sophisticated investors monitor companies and banks is difficult. Therefore, examining the influence of foreign investors on M&A deals in Asia is essential. We find almost no research on M&As in the banking activities of Asian acquiring banks. Little is known about the outcomes of acquiring banks with foreign institutional investors as owners through the M&A process, particularly in Asia–Pacific countries.

Using a comprehensive sample of bank M&As in 16 Asia–Pacific countries since 2000s, we investigate M&A data of banks on a deal level to examine whether the size of equity stake held

by foreign institutional investors affects the acquiring bank's ex-post performance following M&As. We find that when foreign institutional investors hold substantial stakes in acquiring banks, the probability of completed M&As is lower in Asia–Pacific countries. Higher stakes held by traditional financial institutions (e.g., bank-type foreign investors) are positively associated with the likelihood of completing a M&A deal.

We note that the outcome of M&As for acquiring banks heavily depends on the extent to which asymmetric information challenges between an acquirer and its target are reduced. Merton (1987) suggests that investors ensure they receive accurate information on the target firm before purchasing stock. Foreign institutional investors' monitoring activity preceding the finalization of an M&A deal may reduce the challenges of asymmetric information. Furthermore, the impacts of foreign institutional investors may differ depending on their characteristics. If the acquirer's owners are foreign bank investors, they represent peers in the same banking industry. Owing to the banking industry's complexity and high level of specialization, a bank-type foreign investor in the same sector as the acquiring bank can access different information sources other than owner types in terms of understanding the bank business post-merger. Berger et al. (2004) demonstrate that banks are complex industries wherein intangible, firm-specific, and knowledge-based assets are crucial considerations. Previous experience and knowledge in bank ownership may help overcome the complexity, specificity, and know-how of the banking operations needed to alleviate investment inefficiency[1]. Ferrira and Matos (2008) consider some types of financial institutions as gray institutions. In this sense, whether (foreign) institutional investors can monitor effectively, or which types are gray investors, is an empirical question.

[1] Appendix A shows the case studies and expanding bank business to Asia by a Japanese bank.

Accordingly, we investigate whether different performance effects are evident among foreign institutional investors (e.g., traditional financial investors, which typically include banks; investment advisors; and fund-type foreign institutional investors). Prior to the M&A, independent foreign institutional investors with superior monitoring skills buy acquiring bank shares with anticipated improved outcomes. Hence, assessing the influence of foreign institutional investors on acquiring banks is worthwhile.

We investigate potential differences in the performance effects of acquiring banks based on the type of foreign institutional investor from acquirers' strategic perspective. Using the simple Q ratio, we find that acquiring banks' future prospects in Asia–Pacific countries increase in the long run (i.e., 3 years following the completion of M&A deals) when bank-type foreign investors have a high equity stake in the acquirer. Acquiring banks' loan ratios also increase significantly without an accompanying increase in nonperforming loans (NPLs) when held by bank-type foreign investors. NPLs are substantially reduced. However, loan ratios do not increase when fund-type foreign institutional investors have a large stake. These results indicate that the foreign investor's bank type contributes to the acquiring bank's future performance through an influential advisory function in the opaque Asian banking industry.

Regarding profitability, we find that bank income from other fee-based businesses increases regardless of the type of foreign institutional investor. In contrast, foreign institutional investors' fund-type with high equity stakes reduces acquiring banks' costs in the short run. In Asia–Pacific countries, we find a weak decline in acquiring banks' return on assets (ROA) 3 years after the completion of M&As when bank-type foreign institutional investors have a substantial equity stake. However, ROA improves 1 year following M&As.

Finally, we investigate the effects of cross-ownership on total deal synergies and long-term performance, which may be attributed to independent and non-transient cross-ownership (Brooks et al., 2018). We find no evidence of deal synergies resulting from cross-ownership. This may be because banks initially resolve asymmetric information.

The remainder of this paper is arranged as follows. Section 2 provides an overview of previous research. Section 3 presents our hypotheses development. Section 4 describes our sample and presents our empirical methods. Section 5 discusses the empirical results. Finally, Section 6 provides a summary of our observations and directions for further research.

2. PREVIOUS RESEARCH

Previous research on M&As in banking is relevant in the context of this study. Lassoued et al. (2016) investigate how foreign ownership impacts the reduction of bank risk-taking. Boulanouar et al. (2021) show that foreign-owned banks are more stable with a lower probability of defaulting compared to domestically owned banks. Focusing on acquiring bank ownership, we identify various types of foreign institutional investors: traditional foreign (including foreign bank investors), investment advisor foreign, and fund-based foreign investors. Shirasu (2018) find that both stringent financial regulations and strong investor protection enhance the ex-post performances of bank M&As in Asian banks[2]. In contrast, we examine shareholders' role. This

[2] Regulatory reforms made responding to the banking crisis of 2007–2009 aimed to improve bank governance by empowering shareholders to monitor bank managers more closely (Pathan et al., 2021).

study contributes to the literature by exploring the effects of institutional investors on corporate policies[3].

Few studies in the literature focus on M&As and foreign institutional investors' effects on acquiring banks' performance. Gulamhussen et al. (2016) find that banks are critical in noncorporate customers and psychological distance affects the cross-border expansion of commercial banks through M&As. Regarding bank M&A activities in Asia, Lin et al. (2013) show that higher concentration and lower privatization rates in the banking sector are more likely to interest foreign investors and that these activities rely on enforcing reasonable capital regulations as an attractive target for foreign investors.

In particular, in Asian countries in banking, few studies investigate M&A effects. Nguyen (2018) finds that diversified banks in the Association of Southeast Asian Nations (ASEAN) countries have lower costs and higher profits. However, Shirasu (2018), who examines the impact of bank M&As using deal-level data on Asia–Pacific countries, finds contrasting results. They find that strong legal systems and stringent regulations allow Asia–Pacific banks to undertake bank M&As between countries with different economic systems and operate effectively. Bank managers are not only controlled by regulations, but shareholders can also play an active role. For example, investment banks can operate as influential advisors to improve the

[3] Although the analyses targets are not about banks, but about M&A of general companies, studies on M&As focusing on institutional ownership include Ferreira et al. (2010), Andriosopoulos and Yang (2015), Chen et al. (2007), Wu and Chung (2017), and Huang and Shiu (2009). Ferreira et al. (2010) find that institutional ownership is positively associated with the intensity of global cross-border M&A activity. Moreover, they find that institutional investors build a bridge between firms and reduce information asymmetry between bidders and targets. Using a UK sample, Andriosopoulos and Yang (2015) demonstrate that institutional investors increase the likelihood of large, cross-border M&As. For further details, the different types of shareholders may have varying effects on firm strategy and performance. Chen et al. (2007) find that independent institutions with long-term investors specialize in monitoring and influencing efforts related to post-merger performance. Huang and Shiu (2009), investigating Taiwanese firms, find that firms with a high level of foreign institutional ownership outperform those with lower levels of foreign institutional ownership. More interestingly, a higher proportion of ownership owing to hedge fund activism leads to lower M&A activities and better operating performance (Wu & Chung, 2017).

performance of a constrained acquisition in their medium- and long-term perspectives (Guo et al., 2020).

3. HYPOTHESES DEVELOPMENT

Several perspectives are available on the role of foreign institutional investors in M&As. For example, foreign institutional investors can act as international bridges for local firms, thus facilitating M&As (Ferreira et al., 2010). Experience in global institutional investment as a channel for promoting improved governance and convergence in governance practices across countries can potentially influence acquired firms either by directly controlling the management and using voting rights ("voice") or by indirectly buying or selling their shares ("voting with their feet") (Aggarwal et al., 2011). Foreign institutional investors monitor client firms at standard times and significantly influence firms' activity. They reduce gaps in asymmetric information between acquirers and their targets by being present in the target country. Furthermore, the significant presence of foreign institutions may help alleviate the bargaining and transaction costs associated with asymmetric information between acquiring banks and their targets. Through M&As, performance is also expected to improve. From another perspective, foreign institutional investors have fewer business ties to local companies and can be M&A facilitators. These interpretations generally suggest that foreign institutional investors positively impact the acquirer side.

Most studies on M&As tend to focus on Europe and the US; few focus on Asia. Lu and Mieno (2020) find that institutional investor ratios are associated with positive long-term performance in East Asia. By monitoring acquiring local firms, foreign institutional investors in

particular promote good governance. Institutional investors are heterogeneous, and different types of institutional investors conduct monitoring activities at different levels. Theoretical studies (Shleifer & Vishny, 1986; Maug, 1998; Kahn & Winton, 1998) indicate that institutional investors select between exerting additional monitoring effort for shared gain versus only trading for private gain. Some institutions may solely focus on information gathering and trading, choosing not to expend effort on influencing management. Previous empirical studies (Agrawal & Mandelker, 1990; Bushee, 1998; Almazan et al., 2005) also attest that all institutional investors do not monitor R&D investment, acquisition decisions, and various other corporate concerns to the same degree. In the banking industry, Lee et al. (2016) find that a higher ratio of foreign ownership in a bank can enhance competition in emerging Asia. Boulanouar et al. (2021) show that foreign-owned banks are more stable and have lower probability of defaulting compared to domestically owned banks. Therefore, we propose our first hypothesis as follows:

H1*: The presence of acquiring banks' foreign institutional investors increases the intention to complete M&A transactions.*

Given that the first hypothesis holds, the impact of foreign institutional investors may differ depending on the foreign investor type[4]. Here, we define foreign institutional investors: traditional financial institutional investors (with bank type), investor advisor-type, and fund-type as subcategories.

Aggarwal et al. (2011) demonstrate that independent investment advisors that are unlikely to have business ties with the firms they invest in are main drivers of governance improvements rather than non-independent institutions (e.g., bank trusts or insurance companies). Chen et al.

[4] Lassoued et al. (2016) show that, for countries in the Middle East and North Africa (MENA) region, foreign ownership reduces risk-taking.

(2007) find that investment advisors and private or public/pension funds with high equity stakes in shares and a long-term orientation benefit from monitoring and exhibit superior post-merger performance. Maug (1998) obtains similar results. Greater ownership of hedge funds leads to lower M&A activities and improved operating performance (Wu & Chung, 2017). Griffin and Xu (2009) show that hedge funds are considered sophisticated investors with a superior ability to choose stocks. Brav et al. (2008) show that hedge fund activists push firms to focus on core business activities.

While we expect foreign institutional investors to have more sophisticated methods to collect information on targets, the impact is presumably more pronounced in bank institutions owing to their superior skills in information gathering. Banks are critical in the market as signalers of information to capital markets. Ben Slama et al. (2012) note that the success of M&As is conditioned by the adequacy of cultural, organizational, and financial aspects between the target bank and initiating institution. Shaban and James (2018) find that non-regional foreign-owned banks are less risky. Conversely, Gulamhussen et al. (2016) suggest that Asia–Pacific financial institutions follow global client firms to expand their businesses. This contradiction suggests that Asia–Pacific banks may not possess expansive strategic perspectives and that the effects may not be value-enhancing.

The current study examines bank M&As. Generally, banks in the same banking industry are information rich. Bank businesses are typically complex and have opaque knowledge-based assets (Berger et al., 2004). Hence, they are best understood by their peers in the banking sector. This is because the acquirers' owners are indirectly involved in the management of the M&A through their "voice."

Owing to the complex nature of banking compared to nonfinancial firms, banks are more opaque because of their need to protect their clients' private information, and bank assets are mainly financial assets (Morgan, 2002). In bank M&As, identifying the types of shareholders that could potentially play a monitoring role in such an opaque banking environment is therefore essential (Pathan et al., 2021). Banks also serve as M&A advisors to acquiring entities. Investment banks can act as advisors to improve the performance of constrained acquisitions in the medium- and long-term (Guo et al., 2020). Conversely, banks potentially face their own moral hazard challenges. Banks' shareholders have typical risk-taking incentives owing to the absence of insured depositor discipline, opaque bank assets, and government support for the implicit guarantee of a "too-big-to-fail" (TBTF) policy (Morgan, 2002).

Whether banks will diversify their business when conducting M&As remains controversial. Liu et al. (2020) provide evidence of the positive side of the argument for banking specialization. They conclude that uniformity in US banking businesses is positively associated with performance (ROA) and contributes to lower costs. In contrast, Nguyen (2018) argues that in ASEAN countries, diversification in banking contributes to lower (long-term) costs and higher profitability.

We focus on bank M&As in Asia–Pacific countries, where bank-oriented financial systems are dominant. We note that the Asian financial market is opaquer than in Europe and the US. One unique characteristic of the Asian market is the existence of corporate groups, financial groups (*zaibatsu*), and family-related businesses, which include general businesses and financial institutions. Therefore, whether highly qualified foreign investors (e.g., fund activists) will perform in Asia–Pacific countries in the same manner as in Europe and the US is unclear. We therefore propose our second hypothesis as follows:

H2(a)*: A high proportion of equity held by the bank-type foreign financial investors in acquiring banks improves the subsequent performance following the M&A.*

H2(b)*: A high proportion of equity held by the investment advisor-type foreign financial investors in acquiring banks improves the subsequent performance following the M&A.*

H2(c)*: A high proportion of equity held by the fund-type foreign institutional investors in acquiring banks improves the subsequent performance following the M&A.*

Institutional investors with different investment horizons can affect monitoring incentives and, thus, affect various corporate policies and financial decisions (Attig et al., 2013; Fu et al., 2020). Moreover, Alhenawi et al. (2015) show that although Q value decreases in the first year after the merger, it improves systematically in the 4 subsequent years. For banking, banks' financial stability allows long-term shareholders to reap long-term benefits (Bushman et al., 2016). In the US, banks with long-term horizons follow a more traditional business model and conduct superior loan monitoring (Pathan et al., 2021). For Asian bank M&As, as time passes, performance outcomes change (Shirasu, 2018). Alhenawi and Krishnaswami (2015) also empirically demonstrate that merger synergies materialize over time. Hence, we propose an empirical question to assess the differences in performance over time. This study chooses intervals of 1- and 3-years following bank M&As. Pathan et al. (2021) show that banks with more long-term shareholding are associated with lower risk and better stock. Therefore, we propose the following hypothesis:

H3*: The longer time that passes following a M&A deal, the more substantial the subsequent performance improvement becomes.*

Foreign financial investors could significantly influence both acquirers and targets by reducing the asymmetric information gap between them. This is particularly true in situations wherein the acquirer's investors (owners) match the acquirer's targets (hereinafter "cross-owners"[5]) as institutional cross-owners can monitor both acquirer and target managers. As these cross-owners bridge the monitoring or negotiation gap (Dong et al., 2006), they can ensure smooth alliance ownership. In the M&A process, institutional cross-owners may play an important disciplinary role in mitigating information asymmetry and reducing transaction costs (He & Huang, 2017). Investigations to determine whether institutional cross-ownership affects M&A deal outcomes are important (Brooks et al., 2018). Cross-owners have been shown to improve governance in firms within the same industry (He et al., 2019) and have lower information collection costs and better incentives to monitor M&As.

The influence of foreign financial investors increases as acquirers become stronger with higher stakes in the targets. This results in an improvement in acquiring banks. We thus propose the following hypothesis:

H4*: If foreign financial investors are cross-owners between acquirer and target banks with acquirer investors as matchmakers, the subsequent performance of the M&A improves substantially.*

[5] M&A events present a natural empirical testing ground to test the effect of cross-owners on corporate strategy as such events represent identifiable events observable in terms of both acquirers and targets.

4. EMPIRICAL ANALYSES

4.1. Data

We examine all bank M&A transactions in Asia–Pacific countries. Appendix B.1 presents the scope of Asia–Pacific countries. We obtained data on capital alliances, M&A announcements, and completed deals from Thomson ONE Investment Banking and cover the period 2000–2014. We collect all available transaction data on Asia–Pacific banks. At least one of the firms must be a listed bank on the bidder side. Conversely, their targets can be a company belonging to any industry. These investigations are conducted based on data from all Asia–Pacific nations.[6] The sample of M&A transactions is restricted to those with a dollar value attached to their information.

We obtain related accounting data from DataStream. Data for calculating the geographical and industrial diversification measures are based on the Standard Industrial Classifications codes and geographic segment information.

All data on the ownership of foreign financial institutional investors are obtained from Thomson Eikon Ownership Data.[7] Following Chen et al. (2007), we classify types of foreign institutional investors as follows: traditional financial institutions (i.e., banks and trusts; research companies, including brokerages and securities brokers; and insurance companies), which we call bank type; investment advisor financial institutions (i.e., financial investment advisor

[6] We exclude New Zealand from acquirers as all its major banks are subsidiaries of Australian banks.
[7] On Japanese data, the Japanese reporting system does not disclose the names of investors as trust accounts. Hence, based on the Japanese reporting system alone, identifying "real" investors is difficult. For example, Blackrock, which is one of the three largest shareholders of Takeda, is not listed in the Japanese reporting system. Thus, many studies on Japan do not include investors in trust accounts or identify the "real" shareholders. By contrast, we identify investors using data on shareholders from the Thomson Reuters database. This includes trust accounts and calculates the ratio by adding new investors, such as Blackrock. We categorize them into four subgroups.

investors), which we call investment advisor type; and financial fund institutions (i.e., pension funds, advisors of hedge funds, private equity companies, sovereign wealth, government agencies, foundations, and venture capital), which we call fund-type. Appendix B.2 presents the descriptions of these variables in detail.

Acquiring banks in Asia can generally own regular common stocks listed on Asia–Pacific stock markets. Furthermore, they must disclose their accounting data in dollar values. Given this requirement, we obtain detailed and completed transaction data on bank M&As. Level of economic activity, proxied by growth in the gross domestic product (GDP) of the acquiring entity's country, is a potential determinant of individual bank acquisition. The macroeconomic environment is likely to affect bank activities and investment decisions (Pana et al., 2010). This is measured as the annual growth rate of GDP obtained from the Penn World Table Database.

4.2. Methodology

We use the logit model to test H1; the propensity score matching (PSM) method for H2; the propensity score adjusted regression (PSM-AR) method,[8] which is explained by Wooldridge (2010) and Cattaneo (2010), for H2 and H3; and the Heckman two-step regression (Heckman) for H4.

To assess actual merger effects, the selection of the control group in bank M&A is important. To resolve selection bias, Behr and Heid (2011) suggest a matching strategy based on propensity scores. PCM-AR is a method of recycled predictions, which is the predicted mean from the generalized linear model (GLM), and can handle nonlinearities. This approach does not

[8] Family of PSM is classified as one of the strong experience designs.

set 1 and 0 for the sample, but it assigns 1, 2, 3, 4… and 0 for multi-categorized dates. We estimate the parameters via maximum likelihood estimation. The PCM-AR is an alternative approach to multi-select PSMs. We not only analyzed 1 or 0 choices for M&As but also three choices: high, low, or no M&As. The method to obtain the average treatment effects (ATEs) that can handle such nonlinearities is that of recycled predictions (Basu & Rathouz, 2005) as follows:

$$ATE_{i,reg} = \frac{1}{n}\{\hat{\mu}_i(x_i, t_i = 1) - \hat{\mu}_i(x_i, t_i = 0)\}$$

where $\hat{\mu}_i(.)$ is the predicted mean of Y_i. Here, Y_i is estimated from the GLM, and x_i and t_i are set to 1 and 0 for the whole sample. Additionally, we expand this method to multi-categorized dates. We included treatment dummy variables, with treatments classified into 2, 1, or 0. Suppose the ownership ratio of treatments (i.e., acquiring banks) has more than the median value. In this case, it takes 2 (median is calculated without 0); if it is less than the median, it takes 1. Finally, if banks are not involved in M&A deals from the beginning, it takes 0. We compare the treatment banks with high or low equity stakes (2 or 1) with the control banks (0). We only present the results of the comparison between 2 and 1.

4.3. Sample description

We construct our sample using the following procedure. We first select observations where the acquirer industry comprises banks or financial holding companies. We next delete observations with financial and ownership variables greater/lower than the 99th/1st percentile and select observations with data on total assets. All the observations do not necessarily have all the financial and ownership data used in the analyses, and many data points are missing. Appendix B.2 summarizes the variable descriptions.

Table 1 presents the basic descriptive data. Panels A and B present Asian data. Panel A of Table 2 presents the number of Asia–Pacific M&A deals by acquiring country and year. Many completed acquisition deals occurred in Australia (140/712), Japan (132/712), and Thailand (132/712). Panel B of Table 2 present the target countries.

[Insert Table 1 here]

[Insert Table 2 here]

5. RESULTS

5.1. Ownership differences in the completion of M&A deals

5.1.1. Intensity of M&A completion in Asian banks

We estimate the logit model to investigate the determinants of the probability of completing M&A transactions. The dependent variable is a dummy variable that takes 1 if the M&A deal is completed and 0 if otherwise. We focus on the effects of the types of foreign institutional investors on the likelihood of M&A completion using the Q ratio, NPL ratio, loan ratio, total cost ratio, other operational income ratios, total capital ratio, ROA, bank size (lnsize; natural log of total assets), and GDP growth as independent variables. We base this decision on Altunbaş and Marques (2008). Columns 1–6 of Panel A of Table 3 present results for Asia–Pacific countries. Several ownership variables related to the types of foreign institutional investors are used. Row 1 presents the coefficients of the foreign institutional investor ratio, which are generally negative and statistically significant. This indicates the negative impact of foreign institutional investors on the probability of M&A bank deals' completion. Columns 2–5 present details on the types of foreign institutional investors. Only the coefficient of traditional-type foreign investors is

negatively significant. However, the coefficient of bank-type foreign investor ratio is positive and statistically significant. These results indicate that while foreign institutional investors may prevent their client banks from adopting M&A strategies, bank investors promote M&A strategies only with other banks. Note that this result on the foreign institutional investor is consistent with earlier findings regarding general businesses (Brav et al., 2018).

[Insert Table 3 here]

5.1.2. Subsequent performance changes of acquiring banks following M&A deals

Before investigating the effects of different ownership types on bank performance in more detail, we computed the ATE as our preliminary test. For the ATE, we used the PSM method between acquirer (treatment group) and non-acquiring banks (control groups) to see the impact of M&As. Panel B of Table 3 presents the results for acquiring banks in Asia–Pacific countries. Regarding 3- or 1-year changes following bank M&A deals, the ATE of the Q ratio (Column 1). This indicates future growth prospects, and it is positive and marginally significant only for long-holding institutional investors' 3-year changes following M&A. Column 2 shows a decrease in the ATE of NPL ratios in the 3 years following the M&A. Column 3 shows increases in loan ratio 3 years and 1 year following M&As.[9]

Table 3 results indicate that H1 holds for Asia–Pacific countries, particularly from a long-run (3-year) perspective. However, notably, this is a comparison between banks that conducted M&As and those that did not conduct M&As. We do not consider the share ownership of

[9] Berger et al. (1999) have highlighted that following M&A, banks tend to shift their asset portfolios from securities to loans, have more assets and loans per dollar of equity, and raise additional uninsured purchased funds, consistent with a more diversified loan portfolio.

different investor types. The following section provides details on changes in performance, focusing on the ownership ratio of each type of foreign institutional investor.

5.2. Major ownership and changes in acquiring bank performance

We investigated whether influences on acquiring bank's performance differ depending on the type of foreign institutional investor. This includes the traditional and narrowly defined bank-, investment advisor-, and fund-type foreign investors. Panels A and B of Table 4 present the results of the effects of foreign institutional investors on changes in ex-post bank performance in Asia–Pacific countries, focusing on the ownership structure of acquiring banks.

We estimated the PSM-RA model for each performance outcome from $t = 0$ to $t + 1$ (which we call short-term effects) and those from $t = 0$ to $t + 3$ (which we call long-term effects) as our dependent variables. We use the Q ratio (defined as "simple Q") to measure a bank's future prospects. We also use the NPL ratio as a measure of bank health and growth in bank businesses.[10,11] Following Altunbaş and Marques (2008), we used the total cost ratio as a bank efficiency measure and the operating income ratio as the bank diversification ratio. We investigated the significant potential differences between treatment banks (i.e., acquiring banks) with high friction of ownership (more than the median) and controlled banks (i.e., banks without

[10] Baele et al. (2007) demonstrate that the stock market reflects positively on bank income diversification. However, overly relying on noninterest-bearing types of revenue may make banks less safe. Additionally, Acharya et al. (2006) reveal relatively more impoverished quality loan portfolios at the time when a risky bank expands into additional sectors and industries.

[11] Berger et al. (1999) show that, following M&A, banks tend to shift their asset portfolios from securities to loans and to hold more diversified loan portfolios. However, this benefit remains present but weaker in recent bank acquisitions.

M&A experience). Table 4 presents only the ATEs between high equity stakes ownership (more than the median) and non-M&A groups.[12]

[Insert Table 4 here]

5.2.1. Acquiring banks in Asia–Pacific countries: Baseline results

Panel A of Table 4 presents the results of the 3-year change in bank performance following M&As in Asia–Pacific countries. The proxy of high equity stakes by foreign institutional investors is measured by a dummy variable that takes 1 if the ownership of foreign institutional investors is above the median of acquiring banks that have those investors. Hence, the coefficients of "more than the median" reveal the effects of the concentration of each type of ownership of foreign institutional investors on the ex-post performance effects of M&As on acquiring banks.

Columns 1–4 of Panel A of Table 4 present the ATE results of 3-year changes in banks' future growth (Q). These reflect the market view of acquiring banks with a higher share of each investor type in M&A deals in Asian countries. Columns 1 and 2 reveal positive and statistically significant ATEs for only two types of foreign investors: traditional and bank types. (Note that bank is a part of the traditional type.) The results indicate that acquiring banks' simple Q generally improves in the 3 years following the completion of M&A deals if a traditional bank

[12] The detailed PCA-RA results in Asian countries, potential-outcome means, and ATE of traditional investors' Q are shown in the appendix. For example, Panel A of Appendix B.3 presents the results for 3 years following M&A. Panel B of Appendix B.3 shows 1 year following M&A. Results of the potential-outcome mean and ATE for the other owner types are omitted.

type of foreign investor has high equity stakes. The results imply that performance improvement varies depending on the investor type holding substantial shares in acquiring banks. Note that the impact is highest for the bank type of foreign investors.[13] Furthermore, depending on the type of ownership concentration, the results vary substantially.

Columns 5–8 present the results of the 3-year changes in NPLs. The results differ considerably, depending on the type of foreign institutional investors. Although the coefficient of the higher stakes held by traditional type foreign investor is positive and statistically significant, Column 6 shows that the ATE of the higher stakes held by bank-type investors is positive but statistically insignificant. Conversely, Column 8 shows that the ATE of fund-type foreign institutional investors is negative and statistically significant. The results imply that only fund-type foreign institutional investors promote the reduction of acquiring banks' NPLs. Bank-type foreign institutional investors do not seem to increase acquiring banks' NPLs following M&A deals.

Columns 9–12 present the results of changes to the loan ratio in 3 years. Column 10 shows that the ATEs of the high equity stakes held by only bank-type foreign institutional investors are positive and statistically significant. This indicates the effects of bank-type foreign investors on the growth in loans. The result agrees with the results of an improvement in acquiring banks' future growth (Q). Columns 13–16 present the results of the changes in total costs in 3 years. Both the coefficients of the high equity stakes held by traditional and fund-type foreign

[13] We also find that the qualitative results remain the same even if the samples are restricted to the top 10 block-holding shareholders. The ATE of the foreign high-friction ownership (more than median) group is positive and statistically significant at 0.0303 at the 1% level (not reported for space).

institutional investors are negatively significant. This indicates that cost reductions improved bank performance.

Columns 17–20 present the results of the changes in diversified income in 3 years. Coefficients are positive and statistically significant. All foreign institutional investors seem to promote bank diversification after experiencing M&A. Note that bank-type foreign institutional investors are high. These results are consistent with the results of improvement of acquiring bank future growth (Q).

Columns 21–24 present the results of the changes in ROA in 3 years. The coefficient of the high equity stakes held by the investment advisor type is significantly positive. However, for the bank-type foreign investors, this is significantly negative. The result indicates that investment advisory foreign investors increase current profitability (ROA), while bank-type foreign investors reduce profits. This is probably because low global interest rates[14] make it more difficult for banks to make short-term profits (ROA) through increased lending and reductions in NPLs.

Panel B of Table 4 presents the ATE results of 1-year changes. The results are qualitatively similar to those obtained in the 3-year change. When bank-type investors have high equity stakes, the acquiring banks' loans are increased without increasing the NPL ratio. However, diversified income increases, resulting in higher future growth (Q).

Overall, in Asian countries, the high equity stakes held by bank-type foreign institutional investors contribute to the realization of higher future growth (Q) following M&As in both short- and long-term perspectives. Better performance can be achieved by growth in loans and

[14] Table B.4 in the appendix shows the financial, interest, and lending rates in Asian countries over 15 years.

diversification, without any accompanying increase in costs and bank NPLs.[15] In Asia, bank shareholders play an important and influential advisory role regarding core businesses.[16]

5.3. Existence of cross-owner investors and performance changes in acquiring banks

We investigate the effects of the same investor's presence in acquirer and targets, referred to as a "cross-owner." We examine whether acquiring banks' performance improves when cross-owners in acquiring banks and targets exist. We use the Heckman model for each performance outcome.

Table 5 presents the basic descriptive statistics for Asia–Pacific countries. Conversely, Table 6 presents the acquiring banks' second-step regression results and Mills ratios. In the first stage of the logit regression, the dependent variables are digit values. If the same foreign cross-owners in acquiring banks and targets are confirmed, it takes the value of 1; otherwise, it takes 0. In the second-step regression, dependent variables are performance outcomes of the difference between 3-year bank acquirers' values. Independent variables comprise the friction between the targets of the same foreign institutional investors. This is measured by dummy variables for each investor type. The Mills ratio is calculated from the first-step logit regression and control variables.[17] If the dummy traditional bank, dummy investment advisor, or dummy fund is positive and the

[15] We obtain significant results for business diversification in the case of high traditional foreign investor ratios following both 1 and 3 years, especially bank investors. This implies that when acquiring banks are held by traditional type foreign institutional investors (e.g., banks), Asian banks promote their business through diversification.

[16] We also investigate bank M&A deals in European countries as a benchmark for a comparison with counterparts in Asia–Pacific countries as both Asia and European regions have bank-oriented financial systems (Appendix C).

[17] As per Berger et al. (1999), we add two independent variables, namely, size and diversification.

share of target is positive, we expect the results to indicate that information asymmetry between the acquirer and the target is reduced.

[Insert Table 5 here]

[Insert Table 6 here]

Columns 4–6 of Table 6 show that the *p*-values of the Mills ratio are significant. Additionally, the coefficient of the dummy investment advisor is significantly positive. However, the Mills ratio in Columns 1–4 of Table 6 is insignificant for all Q ratios. Moreover, the coefficients of the share of targets are not significant. This result indicates that cross-owner investors have no impact on bank M&As in Asia. Moreover, investment advisor-type foreign investors are only interested in seeking profits (ROA) through money trading. The reduction of information asymmetry through the existence of cross-owners, which was expected, is not observed. Therefore, we find no evidence of deal synergies through cross-ownership. Moreover, there is little room for foreign institutional investors to address the problem.[18]

6. CONCLUSION

We investigated the ex-post performance effects of M&As on acquiring banks by focusing on the ownership structure of the different types of foreign institutional investors. Our findings are summarized below.

[18] These results are congruent with Harford et al. (2011).

We found that when foreign institutional investors hold substantial stakes in acquiring banks, the probability of M&A completion is lower in Asia–Pacific countries. The higher stakes held by traditional financial institutions (e.g., bank-type foreign investors) is positively associated with the likelihood of completing M&A deals in Asian countries.

Moreover, we found that acquiring banks' Q ratios in Asia–Pacific countries rise in the long run when bank-type foreign investors have high equity stakes in the acquirer. Moreover, we found that acquiring banks' loan ratios significantly increase without an accompanying increase in NPLs when held by bank-type foreign investors. These results indicate that bank-type foreign investors contribute to the acquiring bank's future performance through an influential advisory role in Asia's opaque banking industry.

Regarding profitability, banks' income from other fee-based businesses increases regardless of foreign institutional investor type. In contrast, when fund-type foreign institutional investors have high equity stakes in the acquirer, banks succeed in reducing costs in the short run. Additionally, acquiring bank ROAs are weakly diminished in the 3 years following the completion of M&As in Asia–Pacific countries, when bank-type foreign institutional investors have a substantial equity stake, although ROAs improve 1 year following M&As. These results indicate that depending on the type of foreign institutional investor, the performance effects of bank M&As in Asia–Pacific countries differ substantially from those in Europe and the US.

Finally, we conclude by describing issues that have not yet been fully considered. In the present study, we have not fully or explicitly controlled for the effects of financial regulations. Additionally, factors that could reflect the unique characteristics of each country's culture should also be considered. These limitations will be addressed in future research.

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	Treatment Banks			Control Banks		
Variable	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
3 year						
d3_the other operational ratio	572	0.0005	0.0061	2,291	0.0002	0.0056
d3_NPL loan ratio	558	-0.0110	0.0354	2,229	-0.0084	0.0293
d3_loanratio	573	0.0000	0.0619	2,285	-0.0072	0.0664
d3_total cost ratio	576	-0.4124	13.337	2,287	-0.6544	12.479
d3_total capital ratio	576	0.0051	0.0518	2,370	0.0044	0.0349
d3_ROA	576	0.0003	0.0113	2,370	0.0002	0.0095
d3_Q	576	-0.0056	0.0811	2,370	-0.0064	0.0623
1 year						
d1_the other operational ratio	600	0.0003	0.0036	2,421	-0.0001	0.0031
d1_NPL loan ratio	591	-0.0056	0.0192	2,389	-0.0030	0.0159
d1_loanratio	599	0.0005	0.0363	2,423	-0.0029	0.0405
d1_total cost ratio	600	0.2042	13.1261	2,424	-0.0396	12.9184
d1_total capital ratio	600	0.0017	0.0297	2,431	0.0012	0.0218
d1_ROA	600	0.0015	0.0092	2,431	0.0003	0.0070
d1_Q	600	-0.0044	0.0611	2,431	-0.0016	0.0442
Common variables						
GDP grwoth(a)	600	3.8849	4.1378	2,431	3.2061	4.1044

Panel A: Basic variable in Asia–Pacific countries

Variable	Obs	Mean	Std. Dev.	Min	25%tile	50%tile	75%tile	Max
Treatment Banks								
Financial institutional foreigin investor ratio	600	5.533	7.954	0	1.114	3.320	6.931	69.448
Traditional financial investor ratio	600	0.444	1.671	0	0.000	0.013	0.054	14.617
Bank Financial instituitional foreigin investor ratio	409	0.305	1.448	0	0.000	0.012	0.042	14.616
Investment Financial instituitional foreigin investor ratio	600	4.134	5.577	0	0.852	2.481	5.213	51.741
Financial fund insitutional foreigin investor ratio	600	0.955	3.926	0	0.000	0.209	0.645	59.468
Long-term Financial institutional foreigin investor ratio	600	3.952	6.465	0	0.240	1.739	4.801	67.569
Control Banks								
Financial institutional foreigin investor ratio	2431	4.175	8.235	0	0.018	1.580	5.225	99.406
Traditional financial investor ratio	2431	0.279	3.607	0	0.000	0.000	0.013	99.406
Bank Financial instituitional foreigin investor ratio	1575	0.091	0.805	0	0.000	0.000	0.012	15.707
Investment Financial instituitional foreigin investor ratio	2431	3.004	4.670	0	0.008	1.270	4.000	58.684
Financial fund insitutional foreigin investor ratio	2431	0.891	4.727	0	0.000	0.028	0.539	72.582
Long-term Financial institutional foreigin investor ratio	2431	3.253	7.425	0	0.000	0.838	3.758	99.406

Panel B: Distribution of the ownership variable in Asia–Pacific countries

Table 1. Descriptive statistics of the acquiring bank in M&As

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
AUS	19	12	10	9	6	11	13	13	13	17	7	5	1	3	1	140
JPN	13	2	9	10	12	6	19	15	13	10	2	5	8	2	6	132
THA		11	15	15	16	18	9	5	5	12	5	6	1	2	2	122
IND	2		1	6	9	10	7	6	6	8	9	4		5	3	76
MYS	6	3	4	1		3	1	2	9	2	2	1	11	1		46
CHN						1	3	7	5	3	4	7	2	2	4	38
KOR	1	4	1	3	2	2	2	3	4	1	2	2	1	4	2	34
PHL	2	1	2	3	1	5	3	4		2	1	1	2	3	1	31
IDN					1			2	6	3	4	2		3	1	22
HKG	2	2	1	3	2	1	5	1	2	1					1	21
TWN	2	1	5	3	1	1				5					1	19
SGP	2	2				1	2	2	1	2				1		13
PAK			1				1		1	2	2				1	8
VNM											1		1		3	5
LKA	1	2													2	5
Total	50	40	49	53	50	59	65	60	65	68	39	33	27	26	28	712

Panel A: Acquiring banks in Asia–Pacific countries

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
JPN	13	2	9	10	12	5	18	14	12	10	1	5	7	2	6	126
THA		11	15	15	16	17	9	6	5	12	6	5		2	2	121
AUS	12	7	8	8	3	7	8	8	12	10	4	5	3	3	1	99
IND	2		1	6	9	6	6	6	6	7	9	4		4	3	69
CHN			2	3	5	5	2	2	5	3	2	4	2		1	36
IDN	2				1	3	3	2	9	4	5	1		5	1	36
MYS	5	3	4	1		3	3	1	1	2	2	1	8	1		35
PHL	5	1	2	3	1	5	3	4		1	1	1	2	3	1	33
KOR	1	4		2	2		2	2	4	1	2	2	1	4	2	29
HKG	5	2		2		1	4	2	3	3	1	1			2	26
TWN		1	5	3	1	2	1			6			1		1	21
VNM						1	1	2	3		3		1		3	14
USA		1						7	1		1	1	2			13
NZL	2		1			1				4						8
PAK			1				1		3	2	2				1	10
SGP	1	2					2	1		1		1				8
LKA	1	2													2	5
GBR			1				1								1	3
ASM	1	1														2
CAN										1		1				2
FJI		1					1									2
MAC								2								2
TON		1							1							2
TUR														1	1	2
The othe	0	1	0	0	0	3	0	1	0	1	0	1	0	1	0	8
Total	50	40	49	53	50	59	65	60	65	68	39	33	27	26	28	712

Panel B: Targets in Asia–Pacific countries

Table 2. Distribution of bank M&As

	Asia					
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign Institutional Investor ratio	-0.0140**	-0.0190**	-0.0139	-0.0054	-0.0190**	
	(-2.107)	(-2.502)	(-1.428)	(-0.658)	(-2.512)	
Traditional		0.0308**				0.0114
		(2.511)				(1.205)
[Bank]			0.0241**			
			(2.106)			
Inv Advisor				-0.0002		-0.0136
				(-0.0122)		(-1.301)
Fund					-0.0223	-0.0260*
					(-1.246)	(-1.773)
GDP growth of acquire country	0.0335**	0.0339**	0.0335**	0.0344**	0.0338**	0.0343**
	(2.476)	(2.500)	(2.479)	(2.551)	(2.493)	(2.540)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	3,031	3,031	3,031	3,031	3,031	3,031

Panel A presents the results of logit regressions for estimating the probability to complete the acquiring bank's M&A transactions in Asia–Pacific countries. The dependent variable is a dummy variable that takes 1 if the M&A deal is completed and 0 if otherwise. The independent variables include the ownership of institutional investors and specific types of investors, including traditional financial institutions, investment advisors, and financial funds. The other control variables include bank performance measures (e.g., other operating income, nonperforming loans (NPL) ratio, loan ratio, total costs, total capital ratio, return on assets (ROA), Q ratio, bank size, and economic growth).

Panel A: Logit results for the determinants of M&As in Asian countries

ATE from PSM	(1) ΔQ	(2) ΔNPL ratio	(3) Δloan ratio	(4) Δcost ratio	(5) ΔThe other operational income ratio
after three years	0.007	-0.006 ***	0.010 **	-2.689	-0.0001
	(1.531)	(-2.828)	-2.036	(-1.309)	(-0.362)
Observations	2,782	2,782	2,782	2,782	2,782
after one year	-0.001	0.001	0.008 ***	0.067	-0.0002
	(-0.176)	(0.340)	(2.904)	(0.0345)	(-0.512)
Observations	3,031	2,980	3,022	3,024	3,021
after three years Long Holding	0.0130*	-0.003	0.007	0.905	-0.0002
	(1.942)	(-1.223)	(1.013)	(1.177)	(-0.215)
Observations	2,213	2,082	2,142	2,147	2,148

In Panel B, the results depict the 1- and 3-year ATE computed using PSM for acquirers. P-values are in parentheses. The symbols ∗∗∗, ∗∗, and ∗ denote the statistical significance at the 1%, 5%, and 10% level, respectively. Independent variables are performance outcomes of the difference in acquirers' value 3 years or 1 year following M&A and pre-effective year (t = 0) values of financial variables. Independent variables are treatment dummy variables; treatment banks are 1 and 0 if otherwise. Heteroscedasticity-corrected P-values are in parentheses.

Panel B: Acquiring banks in Asia–Pacific countries

Table 3. ATE calculated using PSM for acquirers

Dependent variable	ΔQ				ΔNPL loans ratio			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dummy _more than median (×100)	4.170 ***	4.310 ***	0.762	0.947	1.810 ***	0.688	-0.238	-1.340 ***
	(3.339)	(2.810)	(0.639)	(0.956)	(3.047)	(1.180)	(-1.009)	(-6.111)
Number of estimating OME	2,851	2,851	2,851	2,851	2,782	2,782	2,782	2,782

Dependent variable	ΔLoans ratio				ΔTotal cost ratio			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Dummy _more than median	0.017	0.0297 **	0.010	-0.007	-1.787*	-1.563	0.324	-1.664 ***
	(1.61)	(2.483)	(1.53)	(-0.87)	(-1.747)	(-1.366)	(0.369)	(-2.683)
Number of estimating OME	2,858	2,858	2,858	2,858	2,857	2,851	2,857	2,857

Dependent variable	ΔThe other operational income ratio				ΔROA			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Dummy _more than median (×100)	0.280 ***	0.374 ***	0.180 *	0.240 ***	-0.488	-0.668 *	0.123 **	-0.0116
	(2.771)	(3.353)	(1.845)	(3.184)	(-1.591)	(-1.718)	(2.102)	(-0.213)
Number of estimating OME	2,851	2,851	2,851	2,851	2,851	2,851	2,851	2,851

Panel A: Acquiring banks in Asia 3 years following M&As

Dependent variable	ΔQ				ΔNPL loans ratio			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dummy _more than median (×100)	2.590 ***	1.720 *	0.606	1.160	0.285	0.461	-0.272 **	-0.649 ***
	(3.451)	(1.796)	(1.321)	(1.444)	(1.145)	(1.615)	(-2.344)	(-3.830)
Number of estimating OME	3,017	3,017	3,017	3,017	2,980	2,980	2,980	2,980

Dependent variable	ΔLoans ratio				ΔTotal cost ratio			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Dummy _more than median	0.017 ***	0.014 **	0.012 ***	0.013 ***	1.124	-0.586	1.078	1.389
	(3.151)	(2.216)	(3.607)	(2.729)	(1.239)	(-0.692)	(1.634)	(1.495)
Number of estimating OME	3,022	3,022	3,022	3,022	3,019	3,019	3,019	3,019

Dependent variable	ΔThe other operational income ratio				ΔROA			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Dummy _more than median (×100)	0.124 **	0.181 **	0.010	0.091 *	0.124 **	0.181 **	0.0096	0.0905 *
	(2.465)	(2.458)	(0.343)	(1.921)	(2.465)	(2.458)	(0.343)	(1.921)
Number of estimating OME	3,021	3,021	3,021	3,021	3,021	3,021	3,021	3,021

The results depicted are 1-year or 3-year ATE calculated using R.A. acquirers. P-values are in parentheses. The symbols ∗∗∗, ∗∗, and ∗ denote the statistical significance at the 1%, 5%, and 10% level, respectively. The independent variables are performance outcomes of the difference acquirers' value at 1 year or three years (t = 1) following M&A and pre-effective year (t = 0) values of financial variables. The treatment banks are determined as acquired banks, and the control banks are all Asia–Pacific banks without acquisitions. Regarding the independent variables, there are three dummy variables: a below the median dummy, which takes 1 if the ownership ratio of treatment banks is higher than the median; an above the median dummy, which takes 2 if the ownership ratio of the treatment banks is smaller than the median and 0 if otherwise.

Panel B: Acquiring banks in Asia 1 year following M&As

Table 4. Results of the ATE from PCM-AR model through the effects of the M&A transaction in Asia–Pacific countries

	Holding same owner's Banks			The others's bank		
Variable	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
d3_Q	64	-0.019	0.082	588	-0.004	0.081
d3_loanratio	63	-0.001	0.059	592	-0.001	0.064
d3_NPL ratio	55	0.003	0.036	546	-0.012	0.036
d3_total cost ratio	64	-1.844	17.10	604	-0.360	12.84
d3_the other operational ratio	63	-0.001	0.006	589	0.001	0.007
Traditional financial investor ratio	65	1.066	2.469	624	0.353	1.510
Investment Financial instituitional foreigin investor ratio	65	5.535	5.452	624	3.990	5.604
Financial fund insitutional foreigin investor ratio	65	1.185	4.542	624	1.006	4.165
The share of Target of same investors	65	2.214	4.608	n.a.	n.a.	n.a.

Table 5. Descriptive statistics of acquiring bank cross-owners in Asia–Pacific countries

	Q			ROA		
	(1)	(2)	(3)	(4)	(5)	(6)
The share of Targets	0.001	0.001	0.001	0.000	0.000	0.000
	(0.494)	(0.311)	(0.582)	(-1.403)	(-1.447)	(-1.059)
DummyTraditional	0.005			0.0015		
	(0.805)			(0.922)		
Dummy Investment		0.004			0.0062 *	
		(1.431)			(1.709)	
Dummy Fund			-0.002			-0.001
			(-1.211)			(-0.454)
Mills	0.119	0.124	0.058	-0.008 *	-0.010 *	-0.010 *
	(0.973)	(1.023)	(0.641)	(-1.684)	(-1.932)	(-1.907)
Control	Yes	Yes	Yes	Yes	Yes	Yes
Observations	606	606	606	609	609	609
p[chi2]	0.000	0.000	0.000	0.000	0.000	0.000

The results of 3 years post-M&As, the two-step Heckman regression of acquiring banks with the same foreign owners between acquirers and targets. Heteroscedasticity-corrected P-values are in parentheses. The symbols ***, **, and * denote the statistically significant at the 1%, 5%, and 10% level, respectively. In the first step logit regression, dependent variables are digit values holding the same foreign owners between acquiring bank and targets are 1, the other acquiring banks 0. In the second-step regression, dependent variables are performance outcomes of the difference between 3-year (t = 3) acquirers' value and pre-effective year (t = 0) values of financial variables.

Table 6. Results of two-step Heckman regression through M&A transactions with cross-owners in Asia–Pacific countries

Appendix A

Case studies: Expanding bank business to Asia by a Japanese bank

Since the 2010s, Japan's major commercial banks and regional banks promoted the expansion of banking business to Asia through alignments or M&A with Asian banks. Among Japan's major commercial banks, Tokyo-Mitsubishi UFJ Bank (BTMU) promoted large acquisitions. BTMU has acquired the Bank of Ayudhya (BAY) in Thailand in December 2013, Security Bank Corporation in the Philippines in October 2016, and PT Bank Danamon Indonesia in Indonesia in December 2017.

In this session, we introduce the case study of BTMU's acquisition of BAY and briefly examine BTMU's strategies and results as an acquiring bank. BTMU comprehensively restructured BAY and achieved synergistic effects by utilizing the bank's customer and product power base. It then expanded growth of lending to local suppliers, also increasing fee revenue from BAY's securities business. In summary, the acquiring bank had a good impact on the future of the target bank's business by introducing their knowledge and experience in the banking business.

BTMU acquired 72.01% of BAY's issued stock through a voluntary tender offer (VTO). The tender offer price was 1,706 THB bn with purchasing stock from a large shareholder, GE capital. BAY became a consolidated subsidiary of BTMU and remained a listed bank. The VTO process started in November 2013 and was completed in January 2015. Complying with the Thailand financial regulations called "One Presence Policy," BTMU integrated a Bangkok branch of BTMU with many branches of BAY. BTMU now holds 76.88% of BAY's issued stock.

The background to BTMU's acquisition of BAY reflects the strong demand for money in the Asian market and strong economic growth compared to Japan's low interest rate and low lending

demands. BAY also had a strong portfolio of individual loans and loans to small- and medium-sized firms. At the time, Thailand was already an export base for ASEAN countries with approximately 4,000 Japanese firms. BTMU expanded local networks by acquiring BAY, thereby uncovered hidden financial demand, which included small- and medium-sized enterprises (SMEs). BTMU has effectively incorporated the whole supply chain and increased banking business between Japanese and local firms. The success factors of the BAY investment were BTMU's strength in gathering information on overseas businesses, its own expertise in the banking industry, and strong ties with the governments of both countries, as well as BAY's local network[19].

After the acquisition, in the first year as a consolidated subsidiary of BTMU, BAY experienced a 7% increase in outstanding loans in 2014 compared to 2013. Among it, loans to large corporations increased 10%, SMEs loans increased 7%, and retail loans increased 6%. Although the outstanding loans had increased, the net interest income ratio was 4.3%, almost the same level as 2013, and did not seem to increase in interest income, possibly due to the low interest rates worldwide. Moreover, the NPL ratio was 2.8%, the same level as that of 2013. The adequacy capital ratio was 14.7%, but still well over the 8.5% required by the Bank of Thailand. Non-interest income, including fees from securities and other businesses, increased by 4%

[19] Just after the acquisition in September 2013, MTBU's financial report showed a 4.8 trillion Japanese yen increase in outstanding consolidated loans, even in the loans of BAY alone increased by 2 trillion yen as a consolidated subsidiary (excluding the impact of foreign exchange rates).

compared to 2013. The operating expense ratio was down by 0.4%, and ROA exceeded the 2013 level by 0.1%.

In the 2016 financial statements, 3 years after the acquisition, outstanding loans increased 60% from 2013. Although the net interest income ratio decreased by 0.56% from 2013 because of the growth in fees and non-interest income, net income increased by about 80%. The NPL ratio also decreased by 0.6% over the 3 years, the lowest among the six largest banks in Thailand. At this point, it accounted for roughly 10% of the BTMU financial group's operating income.

Here are some examples of BAY's business as a consolidated subsidiary of BTMU. BAY has actively participated in some of Thailand's leading M&As. In October 2016, when the Thai Union Group, the world's largest canned tuna company, acquired Red Lobster Seafood, the world's largest US seafood restaurant company, BAY supported the acquisition through loans. It is financed the giant Central Group's acquisition of German department stores and liquor giant Bunrode Brewery's acquisition of the Vietnamese food giant Masan Group. Certainly, this lending activity has affected the outcomes of BTMU.

Additionally, another success factor was its lower NPL ratio. According to the Nikkei, in early 2014, when Thailand's political situation was in turmoil, BAY significantly increased the number of personnel of Credit Recovery Unit in household loans and auto loans. Consequently, BAY's NPL ratio declined and was lower than the average of Thailand's four largest banks.

Appendix B.

B.1. Scope of Asia–Pacific countries

Australia, Bangladesh, Bhutan, Brunei, Cambodia, China, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Hong Kong, India, Indonesia, Kiribati, Laos, Macau, Malaysia, Maldives, Marshall Islands, Mongolia, Myanmar, N. Mariana Islands, Japan, Nauru, Nepal, New Caledonia, Norfolk Islands, North Korea, Pakistan, Palau, Papua New Guinea, Philippines, Singapore, Solomon Islands, Samoa (US), South Korea, Sri Lanka, Taiwan, Timor-Leste, Thailand, Tokelau, Tonga, Tuvalu, Vanuatu, Vietnam, and Western Samoa

B.2. Variable descriptions

Variable	Description
d_the other operational ratio	Change in the other operational ratios of acquiring banks 1 (3) year(s) following the M&As. The other operating income ratio is defined as the ratio of other operating revenue to total assets as a measure of diversification.
d_NPL loan ratio	Change in the nonperforming loan (NPL) ratio 1 (3) year(s) of acquiring banks following the M&A transaction. A NPL is defined by the ratio of NPLs to total loans as a measure of health.
d_total loan ratio	Change in the acquiring banks' loan ratio 1 (3) year(s) following M&As.
d_total cost ratio	Change in variables for 1 year of acquirers' ratio between 1 year following the acquisition and prior to the acquisition. The total cost ratio is total costs over operating incomes.
d_total capital ratio	Change in acquiring banks' capital ratios for 1 (3) year(s) following M&As. The capital ratio is defined as the ratio of total capital to total assets as a measure of health.
d_ROA	Change in acquiring banks' ROAs 1 (3) year(s) following the M&A transaction. ROA is defined as net income over total assets as a measure of profitability.
d_Q	Change in the Q ratio (Simple Q) 1 (3) year(s) following the M&A transaction. The Q ratio is the market value of capital plus the book value of debt over the book value of capital as a measure of quality.
Size	Acquiring bank size. The size is defined as the log of the acquiring bank total assets.
d_GDP growth(a)	Change in acquirers' GDP growth rate 1 (3) year(s) following the M&A transaction.
Country dummy	The country dummy is a dummy variable of the acquirers' country.
Foreign institutional investor ratio	The foreign institutional investor ratio is the ratio of acquiring banks' number of shares held by foreign institutional investors, such as financial institutions (bank and trust, hedge fund, investment advisor, insurance company, investment advisor for a hedge fund, pension fund, and private equity) to the acquiring banks' total number of outstanding stock.
TOP10 investor ratio	The TOP 10 investor ratio is the ratio of the top ten investors in our data.
LONG investor ratio	The LONG investor ratio is the ratio held by block holders that contain the same stocks for at least over 1 year in our data.

Traditional financial investor ratio	The traditional financial investors' ratio is the ratio of acquiring banks' number of shares held by foreign financial traditional institutional investors (banks and trusts, research companies, and insurance companies) to the acquiring banks' total outstanding stock.
Investment advisor ratio	The investment advisor holding ratio is the ratio of acquiring banks' number of shares held by foreign investment advisors to the acquiring banks' total outstanding stock.
Financial fund ratio	The foreign fund ratio is the ratio of acquiring banks' number of shares held by financial funds (pension funds, advisors for hedge funds, private equity, sovereign wealth, government agencies, foundations, and venture capital) over acquiring banks' total number of outstanding stock.

B.3. Outcome models, means of potential outcome, and the ATE of the Q ratio for traditional investors

Panel A: Asia–Pacific Countries 3 years following M&As

1) Outcome model equation (non-linear model)			
	Non M&A	less than median and zero	more than median
The other operational income ratio(t-1)	-0.0876	1.5090 **	-5.1020 ***
	(-0.455)	(2.038)	(-4.775)
NPL ratio(t-1)	0.0029	0.131 *	0.0147
	(0.0835)	(1.791)	(0.168)
loanratio(t-1)	-0.0640 ***	-0.0595	-0.2910 ***
	(-3.256)	(-1.625)	(-4.306)
total cost ratio(t-1)	-0.0008 ***	-0.0013 *	-0.001
	(-4.769)	(-1.713)	(-1.222)
Total capital ratio(t-1)	-0.0469	0.1400	0.2650 **
	(-0.863)	(1.341)	(2.299)
roa(t-1)	0.1290	0.3690	0.0052
	(0.493)	(0.754)	(0.0064)
Qratio(t-1)	-0.3620 ***	-0.3360 ***	-0.4450 ***
	(-6.815)	(-3.581)	(-4.744)
lnsize(t-1)	-0.0730 ***	-0.088 ***	-0.3590 ***
	(-6.180)	(-3.101)	(-4.947)
d3_lnsize	0.0203 ***	-0.0122	-0.0660 ***
	(3.056)	(-0.817)	(-2.718)
d3_The other operational income ratio	-0.0154	0.8870	-2.9170 ***
	(-0.050)	(0.846)	(-3.148)
d3_total cost ratio	-0.0006 ***	-0.0008	-0.0012 *
	(-4.914)	(-1.242)	(-1.723)
d3_loan ratio	-0.0096	0.0277	-0.1020
	(-0.455)	(0.477)	(-1.170)
Foreigin institutional investor ratio(t-1)	0.000	0.0002	-0.0011 **
	(-0.370)	(0.651)	(-2.487)
GDP growth of acquire country(t-1)	-0.0007 ***	-0.000824	-0.0003
	(-1.980)	(-0.686)	(-0.209)
Constant	Yes	Yes	Yes
Observation	2,851	2,851	2,851

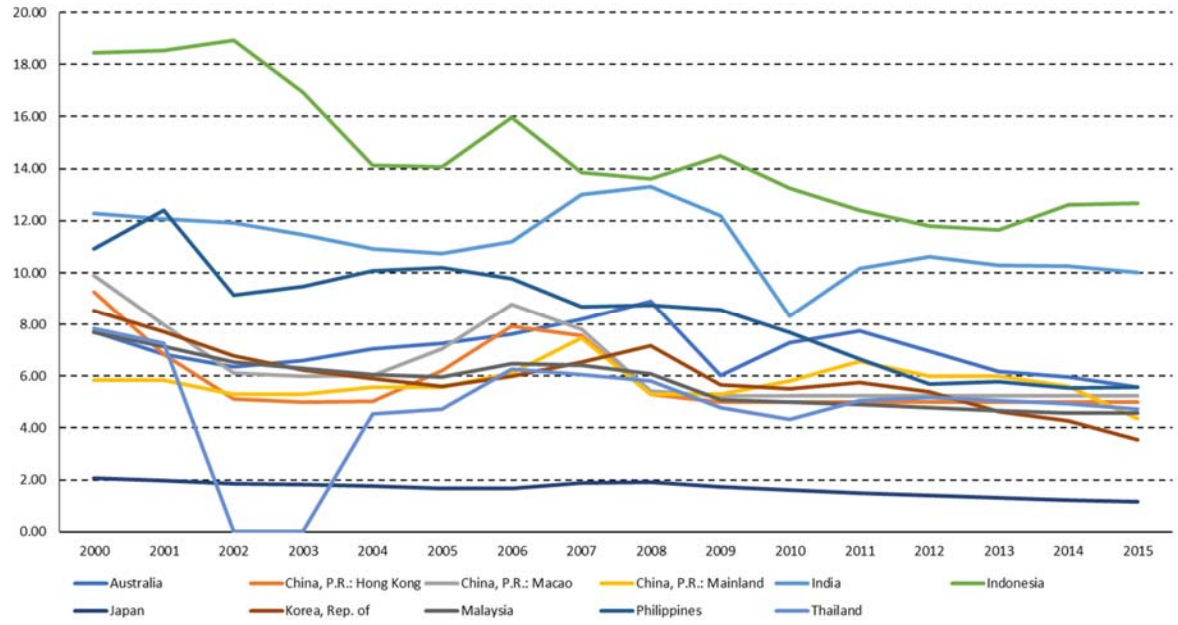
2) Pomean: estimate potential-outcome means	
	-0.0062 ***
	(-4.257)
3) ATE：estimate average treatment effect	
less tha median and zero	0.0040
	(0.923)
more than median	0.0417 ***
	(3.339)

Panel B: Asia–Pacific countries 1 year following M&As

1) Outcome model equation (non-linear model)			
	Non M&A	more than median	less than median and zero
The other operational income ratio(t-1)	-0.137	1.9550 **	-0.146
	(-0.811)	(2.439)	(-0.221)
NPL ratio(t-1)	-0.0077	0.0765	0.0119
	(-0.329)	(1.294)	(0.176)
loanratio(t-1)	-0.0392 ***	0.0129	-0.0742 ***
	(-2.935)	(0.533)	(-3.216)
total cost ratio(t-1)	-0.0003 ***	-0.0009 ***	-0.0009 **
	(-2.766)	(-2.692)	(-2.520)
Total capital ratio(t-1)	-0.0600	-0.1770 ***	-0.3020 ***
	(-1.426)	(-2.740)	(-3.508)
roa(t-1)	0.118	1.261 ***	1.6900 **
	(0.659)	(3.217)	(2.226)
Qratio(t-1)	-0.196 ***	-0.4120 ***	-0.5010 ***
	(-5.182)	(-6.232)	(-5.528)
lnsize(t-1)	-0.0162 **	-0.0598 ***	-0.1430 ***
	(-2.148)	(-3.398)	(-3.535)
d1_lnsize	0.0386 ***	0.0068	0.0261
	(3.630)	(0.432)	(0.856)
d1_The other operational income ratio	-0.3580	2.8860 ***	-0.4370
	(-0.862)	(3.034)	(-0.478)
d1_total cost ratio	-0.0002 ***	-0.0005 *	-0.0008 **
	(-3.169)	(-1.791)	(-2.237)
d1_loan ratio	-0.0183	-0.0570	-0.0889
	(-0.640)	(-0.650)	(-0.848)
Foreigin institutional investor ratio(t-1)	0.0000	0.0009	-0.0005
	(-0.479)	(1.267)	(-1.301)
GDP growth of acquire country(t-1)	0.0006 **	0.0012	0.0015
	(2.073)	(1.308)	(1.335)
Constant	Yes	Yes	Yes
N	3017	3017	3017

2) Pomean: estimate potential-outcome means	
	-0.0016
	(-1.516)
3) ATE：estimate average treatment effect	
less tha median and zero	-0.0019
	(-0.583)
more than median	0.0259 ***
	(3.451)

B.4. Financial interest rates and lending rates in Asian countries across 15 years



(Data Source: IMF Data)

Appendix C.

We also investigated bank M&As in countries in the European Union (EU) as a benchmark for a comparison with counterparts in Asia–Pacific countries as both Asia and European regions have bank-oriented financial systems. Additionally, Europe is a single financial community and so is the UK. The system is uniquely well-regulated, making it a suitable benchmark for comparing Asia's diversity and complexity. Moreover, a bank-oriented financial system (both Asia and the EU) allocates a significantly more important role to banks in capital markets than systems in other countries.

We confirmed that the performance effects of bank M&As in Asia–Pacific differ substantially from those in the EU, possibly because of Asia's potential for economic growth. For example, no evidence could be found on a change in the ROA for acquiring banks from either a short- or long-term perspective following M&As in European countries. One motivation for conducting the same analysis for EU countries is the uniqueness of the EU's financial markets as it has been developed for integration into a single, multinational financial market. The goal of financial integration is to realize improved and more accurate financial transactions at lower costs.

Examining institutional investors' activities in Europe, Becht et al. (2010) provided evidence on foreign hedge fund investors' activism in bank M&As in Europe. Highly profitable cases exist wherein foreign investors (e.g., the investment advisor type) have had a crucial influence on governance. Consider, for example, a UK-based hedge fund, the Children's Investment Fund (TCIF). In 2007, TCIF played a leading role in the takeover of ABNAMRO, a Dutch bank. The takeover was initiated via an open letter to ABNAMRO proposing five resolutions aimed at

forcing the bank to spin off its different lines of business, which would then lead to bids by foreign banks (*Economist*, 2007).

Our results for European countries are similar to those of Lou et al. (2020), where they found a positive relationship between foreign investor ratio and long-term performance after acquisition, and argued that foreign institutional investors provide effective monitoring for acquiring local companies in East Asia, which promotes good governance.

Table C.1 presents the scope of Europe countries, as well as the basic descriptive statistics data. Panel A of Table C.3 presents the number of the European M&As by acquiring country and year. Many completed acquisition deals are found in Italy (222/1,482), Spain (191/1,482), and Germany (188/1,482). As per Molyneux et al. (2014) and Lekdag et al. (2020), the countries with the highest frequency of bank M&A activities in the EU are Italy and Spain, namely, countries that have struggled to write off their NPLs in the banking sector. Panel B of C.3 presents the target countries.

Table C.4 presents the counterpart results of the logit regression on European countries for a comparison with those of Table 3 in Asia–Pacific countries. The results demonstrate a positive relationship between foreign bank institutional investors and the probability of completing M&A deals. The coefficients of GDP are negatively significant. One possible interpretation is that bank M&As may be used as a bank bailout tool in developed European economies.

As a reference for understanding the unique characteristics of bank M&As in Asia–Pacific countries in Table 4, Table C.5. presents the results of the 3-year change in bank performance following M&As in European countries. We calculate the ATE from the PCM-AR Model through the effects of M&A transactions in European countries.

Columns 1–4 show insignificant results for the future growth (Q) variable, except in the case of investment advisor-type foreign investors indicating negative effects on Q. The results suggest that acquiring banks in European countries do not improve future growth (Q) in the 3 years following M&As. In this sense, the results are opposite those obtained for Asia.

Columns 5–8 show the results of the 3-year change in NPLs. The results are generally consistent across all types of foreign institutional investors. Equity held by foreign institutional investors typically reduces acquiring banks' NPLs following M&As in European countries. Columns 9–12 present the results for changes in the loan ratio in 3 years. Unlike the Asia–Pacific countries, the coefficients are generally positive and significant, indicating that shareholders promote an increase in bank loans following M&As, regardless of the type of foreign investors.

Columns 13–16 present the results of changes in total costs in 3 years.[20] Here, the coefficients of the traditional and (subcategory) bank-type foreign investors are positively and statistically significant, indicating that the total costs of acquiring banks are substantially increased in the 3 years when the traditional (or bank-type) foreign investors have high equity stakes in acquiring banks. Columns 17–20 present the results of changes in diversified income in the 3 years, which are statistically significant. Columns 21–24 present the results of ROA changes in 3 years. However, they are insignificant except for fund-type investors, which differs considerably from

[20] In the EU, the economic barrier comprised limited opportunities to pay for the deal by reducing costs. Cost-cutting opportunities are also limited by governmental restrictions on employee lay-offs. Carbó Valverde et al. (2007) demonstrated that reliance on scale alone to raise cost efficiency may not be sufficient in the EU banking market. Molyneux (2003) found that domestic deals are more motivated by cost efficiency considerations, whereas earnings diversification may be more important for cross-border bank deals.

the results in Asia. Remember that bank future growth (Q) is not improved, and thus loan business expansions may be costly and burdensome without the benefit of multi-businesses. Overall, in European countries, the high equity stakes held by foreign institutional investors contribute to reducing banks' NPLs from a long-run perspective[21]; however, the result is the reverse in Asia. Our results on European countries are similar to those of Molyneux et al. (2014); that is, there is a positive relationship between safety net benefits results from M&A activity and bank rescue probability, suggesting in moral hazard in banking systems. Further, Elekdag et al. (2020) showed that major European banks have remained NPL heavy and ROA light even after the financial crisis, suggesting that they need to change their business models to become more profitable.

[21] A principal feature of the results of EU bank M&As is investors' interest in reducing NPLs regardless of investor type. In their list of "resolved banks in 9 EU countries," Molyneux et al. (2014) observed the seriousness of the NPL problem among European banks. In addition, the problem of European banks is that "safety net benefit" is positively related to the probability of a bailout, thus creating a moral hazard. This is the so-called the TBTF problem. Lekdag et al. (2020) argued that, although the profitability of major European banks has declined since Lehman Brothers, unlike the US, they need to change their business models to reduce NPL and costs to increase profitability. This is in sharp contrast to circumstances in Asia, particularly in Japan. Sakawa et al. (2020) showed that Japanese TBTF banks were not reinforced by strong regulations following the global crisis.

C.1. Scope of European countries

Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, Germany, Greece, Greenland, Guernsey, Hungary, Iceland, Isle of Man, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Ireland, Romania, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom

C.2. Basic variables for Europe

Variable	Obs	Mean	Std. Dev.	Min	25%tile	50%tile	75%tile	Max
Treatment Banks								
Financial institutional foreigin investor ratio	963	9.1480	11.0042	0	1.660	6.787	11.041	91.398
Traditional financial investor ratio	963	0.8323	5.6011	0	0.014	0.075	0.271	82.979
Bank Financial instituitional foreigin investor ratio	880	0.6552	5.7574	0	0.010	0.049	0.123	82.810
Investment Financial instituitional foreigin investor ratio	963	7.1906	8.0838	0	1.412	5.486	9.087	68.296
Financial fund insitutional foreigin investor ratio	963	1.1251	3.3261	0	0.100	0.252	0.918	34.597
Long-term Financial institutional foreigin investor ratio	963	7.6092	10.2644	0	0.589	5.292	9.222	90.486
Control Banks								
Financial institutional foreigin investor ratio	1270	4.0369	9.7947	0	0.004	0.338	2.936	88.416
Traditional financial investor ratio	1270	0.4032	4.6317	0	0.000	0.000	0.013	82.810
Bank Financial instituitional foreigin investor ratio	994	0.3855	4.8769	0	0.000	0.000	0.019	82.810
Investment Financial instituitional foreigin investor ratio	1270	2.9479	7.0922	0	0.002	0.279	2.396	60.836
Financial fund insitutional foreigin investor ratio	1270	0.6858	3.0738	0	0.000	0.000	0.109	46.306
Long-term Financial institutional foreigin investor ratio	1270	3.316	8.882	0	0.000	0.156	1.976	88.416

C.3. Distribution of bank M&As in European countries
Panel A: Acquiring banks

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
ITA	36	26	23	17	7	24	13	18	17	9	10	11	4	2	5	222
ESP	22	17	14	12	5	8	16	10	19	6	8	8	17	16	13	191
DEU	13	4	13	22	11	21	15	27	33	7	5	5	4	5	3	188
CHE	5	3	3	4	8	9	13	13	12	8	10	9	3	7	8	115
FRA	9	14	13	10	13	10	11	2	2		3	2	2	4	1	96
GRC	10	10	7	7	3	16	13	6	2	1	7		1		3	86
GBR	4	3	2	7	8	7	7	7	12	4	5	5	4	2	2	79
SWE	6	3	4	4	6	8	3	9	7	6	9	5	2	4	1	77
POL	5	14	7	4	2		1	2		6	3	4	1	7	4	60
AUT	2	2	7	2	8	7	11	8	1	1	1	1		1		52
DNK	4	5	4	1	4	3	3	1	4	2	3	4	3	6	5	52
NOR		3	1	2	3	3	2	8	2	12	2	6		1	1	46
NLD	8	1	3	4	2	6	4	3	2	1					1	35
PRT	5	2	2	3	1		2	2		6	3	2	2	2	1	33
HUN	1	2	3		2	2	6	3	1		2		1			23
BEL		1	4	1	10	6										22
TUR		1	1			1	1	1		1	3	3	3	4	3	22
ISL				2	3	3	3	8								19
CYP						1	2	6		1						10
IRL	1		1			3	2	3								10
LTU							1	1	1	3	3					9
Others	2	7	0	1	1	3	3	3	3	0	3	3	3	1	2	35
	133	118	112	103	97	141	132	141	118	74	80	68	50	62	53	1482

Panel B: Targets

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
ITA	30	24	27	16	8	21	19	17	17	9	11	12	4	2	5	222
ESP	16	9	9	8	2	3	4	8	15	5	3	8	17	14	11	132
DEU	7	3	3	8	9	13	2	11	9	4	2	1		3	1	76
GBR	2	4	3	8	8	10	7	6	11	1	3	2	3	2	2	72
POL	10	16	7	3	3	4		1	1	6	6	3	1	7	4	72
USA	6	6	1	3	6	5	12	12	6	2	4	3	1	3	1	71
DNK	2	6	5	2	3	3	3	2	7	3	6	4	3	6	3	58
GRC	6	10	6	5	4	7	5	4	1	1	4		2		2	57
NOR		3	1	4	7	6	2	5	3	13	4	5	2	1	1	57
FRA	7	3	11	7	7	4	3	2	1	2		1		3		51
RUS				1	3	5	9	7	11		5	1	3	1	3	49
SWE	1		2	2	5	2	1	10	2	3	1	6	1	4	2	42
CHE	3	3	2	6	2	1	1	2	4	7	2	1	1	2	3	40
PRT	2	3	5	5	6	2	3			3	3	2	3	2	1	40
TUR	2	1	1	1		5	8	3		2	4	3	3	3	4	40
AUS	1	1	1	6		3		1	2	1	1	3		1		21
UKR						2	7	7	2		1	1				20
NLD		1	2	1	3	1	1	2	4		1	1			2	19
AUT	2	1	2		1	1	1	4	2		1	1		2		18
HUN	1	1	4	2		2	2	1	2		2		1			18
FIN	1		1		2	3	2	4			1			1	1	16
BRA	2	1				2	2	1	2	1	1	1			2	15
CZE	3	4	1		3		2					2				15
ISO				1		11	3									15
IRL	1		1	1	1	1	2	2	3	1					1	14
BGR	1		1	1		1	1	4			1	1	2			13
CHN			2		2	2	3	1	1	1				1		13
MEX	3	2	1	1	1	1	2				1			1		13
ROM	1		1	1	3		3		1	1		1				12
Others	23	16	12	10	8	20	22	24	11	8	12	5	3	2	4	180
Total	133	118	112	103	97	141	132	141	118	74	80	68	50	61	53	1481

C.4. Logit results for the determinants of M&As in European countries

	Europe					
	(7)	(8)	(9)	(10)	(11)	(12)
Foreign Institutional Investor ratio	0.00810	0.0000	0.0058	0.0186***	0.0004	
	(1.331)	(0.0029)	(0.541)	(2.979)	(0.0542)	
Traditional		0.0240*				0.0236**
		(1.720)				(2.129)
[Bank]			0.0257*			
			(1.831)			
Inv Advisor				0.00414		0.0153*
				(0.299)		(1.908)
Fund					-0.0932***	-0.0733***
					(-4.509)	(-3.875)
GDP growth of acquire country	-0.0285*	-0.0299*	-0.0284*	-0.0340**	-0.0299*	-0.0342**
	(-1.668)	(-1.741)	(-1.665)	(-1.972)	(-1.739)	(-1.980)
Control Variables	YES	YES	YES	YES	YES	YES
Observations	2,233	2,233	2,233	2,233	2,233	2,233

C.5. ATE results of the PCM-AR model through the effects of the M&A transactions in European countries

Three years following M&As

Dependent variable	ΔQ				ΔNPL loans ratio			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dummy _more than median (×10)	-1.080	-0.053	-16.100 **	-0.012	-0.093 **	-0.075 **	-0.168 ***	-0.083 *
	(-0.120)	(-0.060)	(-2.063)	(-0.001)	(-2.11)	(-2.01)	(-4.24)	(-1.66)
Number of estimating OME	2,080	1,857	2,080	2,080	2,051	1,790	2,051	2,051
Dependent variable	ΔLoans ratio				ΔTotal cost ratio			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Dummy _more than median	0.011 *	0.021 **	0.011 ***	0.002	4.505 **	4.169 ***	-1.782	1.653
	(1.92)	(2.43)	(2.67)	(0.48)	(2.50)	(2.82)	(-1.05)	(1.16)
Number of estimating OME	2,210	1,864	2,210	2,328	2,083	1,860	2,083	2,083
Dependent variable	ΔThe other operational income ratio				ΔROA			
Type of Foreign Institutional Investors	Traditional		Inv Advisor	Fund	Traditional		Inv Advisor	Fund
	[All]	[Bank]			[All]	[Bank]		
	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Dummy _more than median (×1000)	0.758	0.116	0.71	0.86	0.160	-0.612	-0.250	2.190 **
	(1.248)	(0.218)	(1.391)	(0.960)	(0.21)	(-0.73)	(-0.23)	(2.41)
Number of estimating OME	2,095	1,867	2,095	2,095	2,083	1,860	1,860	1,860

The results depict the 3-year ATE calculated using R.A. acquirers. P-values are in parentheses. The symbols ∗∗∗, ∗∗, and ∗ denote the statistical significance at the 1%, 5%, and 10% level, respectively. The independent variables are the performance outcomes of the different acquirers' value 3 years (t = 1) following M&As and the pre-effective year (t = 0) values of financial variables. The treatment banks are determined as acquired banks, and the control banks are all European banks without acquisitions. Regarding the independent variables, there are three dummy variables, including a below the median dummy, which takes 1 if the ownership ratio of treatment

banks is higher than the median and above the median dummy, which takes 2 if the ownership ratio of treatment banks is smaller than the median and 0 if otherwise.