

Consolidation of Banks in Japan: Causes and Consequences

Kaoru Hosono*

Koji Sakai**

Kotaro Tsuru***

Abstract

We investigate the motives and consequences of the consolidation of banks in Japan during the period of fiscal year 1990-2004 using a comprehensive dataset. Our analysis suggests that regulators' attempt at stabilizing the local financial market through consolidations played an important role in the mergers and acquisitions (M&As) conducted by regional banks or credit cooperative (*shinkin*) banks, though their attempt does not seem to have been successful. Value maximization motives also seem to have driven the M&As conducted by major banks and regional banks in the early 2000s. We obtain no evidence that supports managerial motives for empire building.

Key Words: Bank Mergers, Efficiency, Stability, Japan

* Gakushuin University

** Graduate School of Hitotsubashi University,

*** Research Institute of Economy, Trade, and Industry (RIETI)

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1. Introduction

Mergers and acquisitions (M&As) among financial institutions have been accelerating over the last two decades across the world. In the U.S., a large number of commercial and savings banks were taken over by other depository institutions during the 1980s and especially after restrictions on intrastate and interstate banking were removed by the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994. Recently, financial conglomerates have emerged through a series of M&As after restrictions on securities and insurance businesses by banks were lifted by the Gramm-Leach-Bliley Financial Service Modernization Act. In Europe, the emergence of the European Union in 1999 seems to have spurred consolidation of the financial services industry. In the crisis-hit Asian countries, foreign capital entry into the banking industry and government recapitalization promoted bank consolidation. In Japan, a variety of banks have been consolidated since the 1990s when most banks suffered from a huge amount of non-performing loans.

These waves of mergers and acquisitions in the banking industries across the world raise important questions of whether mergers enhance the efficiency of surviving banks and contribute to the stabilization of the banking sector or just increase their market power in setting prices. A large number of studies attempt to resolve these questions by examining profitability, cost efficiency and market performance of merger survivors. Berger, Demsetz and Strahan (1999) review existing research concerning the causes and consequences of the consolidation of the financial services industry. They point out that the evidence is consistent with increases in market power especially in the case of consolidation within the same market; improvements in profit efficiency, and diversification of risks, but little or no cost efficiency improvement on average; and potential costs to the financial system from increases in systemic risk or expansion of the financial safety net. However, most of the existing studies examine the consolidation among the U.S. or European financial institutions and little is known about the causes and consequences of financial consolidation outside the U.S. or Europe.

This paper investigates the causes and consequences of the consolidation among Japanese banks. In Japan, the number of large, city banks remained at 13

during the 1980s but decreased almost by half to 7 in 2005. While the number of first-tier regional banks virtually did not change over the last two decades (63 in 1980 and 64 in 2005), the number of second-tier regional banks decreased from 71 in 1980 to 48 in 2005. The number of credit banks (*shinkin*) also dropped from 462 in 1980 to 301 in 2005¹.

Okada (2005) studied 10 mega-mergers among city banks during 1989-2000 and found that no improvement in X-inefficiency was observed but increases in cumulative excess stock returns and decreases in perceived default probability were found. Her results suggest that the motivation of mega-mergers was not to improve efficiency but to take advantage of the government's too-big-to-fail policy. Yamori, Harimaya and Kondo (2005) studied financial holding companies of regional banks and found that profit efficiency tended to increase when the market share in the region increased. Hosono, Sakai and Tsuru (2006) analyzed the motives and consequences of credit corporative (*shinkin*) banks during the period of 1984-2002². Their major findings are as follows. First, less profitable and cost efficient banks were more likely to be an acquirer and a target. Second, acquiring banks improved cost efficiency but still deteriorated their capital-to-asset ratio after consolidation. Finally, the consolidation of *shinkin* banks tended to improve profitability when the difference in the ex-ante profitability between acquiring banks and target banks were large. This paper extends Hosono et al., (2006) to cover most Japanese banks, including city banks, first-tier regional banks, second-tier regional banks, and *shinkin* banks.

Compared with the preceding studies on the consolidation of Japanese banks, this paper comprehensively analyzes the causes and consequences of bank mergers in the following ways. First, we analyze motives of bank mergers as well as their consequences. Using ex-ante bank characteristics, we investigate what type of a bank was more likely to be a target or an acquirer. Looking at the post-merger performance of a consolidated bank, we examine the effects of mergers on the cost efficiency, profitability and healthiness. Though many preceding studies focus on profitability and cost efficiency, it would be important to examine whether bank consolidation improved bank healthiness or not, if regulatory authorities promote bank consolidation to stabilize the banking system. We measure long-run post-merger performance based on accounting ratios rather than stock market returns. Analyzing market returns would severely reduce the sample size, given that many regional banks and all *shinkin* banks are not publicly traded. In addition, accounting ratios enable us to analyze important components of performance (e.g.,

cost efficiency or market power)³. Finally, our observations are comprehensive. We use data of major banks and regional banks over the period of fiscal year 1990-2004 (i.e., from March 1991 to March 2005), and data of *shinkin* banks over the period of fiscal year 1990-2001 (i.e., from March 1991 to March 2002). Our sample universe accounts for more than 80% share of deposits in all the depository institutions in Japan⁴. During the sample period, there were 10 mergers by major banks, 9 mergers by regional banks, and 73 mergers and 2 transfers of business among *shinkin* banks⁵, besides the mergers and transfer of business from failed banks.

The rest of the paper is organized as follows. Section 2 discusses the motivation of bank mergers. Section 3 overviews the M&A waves in Japan. Section 4 describes our dataset. Section 5 presents the estimation results of the motivation of bank mergers. Section 6 shows the estimation results of the impacts mergers on profitability, market power, cost efficiency, healthiness and portfolio. Section 7 concludes.

2. Hypotheses on the motives of bank consolidation

This section reviews some major hypotheses on the motives of bank consolidation.

A. Value Maximization

As Berger et al., (1999) points out, the primary motive for consolidation would be maximizing the value of shares owned by existing shareholders. Banks can maximize value either by increasing their market power in setting prices or by increasing their efficiency. Market power can be strengthened if two or more banks operating in the same market are consolidated and consequently the market becomes more concentrated. The improvement of efficiency can be achieved either by improving cost efficiency or changing product mix, given the market power. Cost efficiency will be improved if an efficient bank spreads its superior managerial skills to an inefficient bank by acquiring the latter. Profitability will be enhanced by superior risk management. Existing empirical evidences on the U.S. banks and thrifts support the value maximization hypothesis (Berger and Humphrey, 1992; Pilloff and Santomero, 1998; and Peristiani, 1993).

While major banks and regional banks are corporations and hence potential motives to increase their values by M&As, *shinkin* banks are corporatives, making loans mainly to the member small and medium enterprises (SMEs) who capitalize

shinkin banks. Member SMEs cannot resale their equity. Due to such legal and organizational differences, the value maximization motives might be weaker for *shinkin* banks than for major banks or regional banks.

The value maximization hypothesis suggests that an efficient bank tends to acquire or purchase the business of an inefficient bank.

B. Stabilization of Banking System

The government also plays a role in consolidation decisions from the viewpoint prudential regulation policy. During financial crises, the government may promote bank consolidation among unhealthy or inefficient banks to restore the stability of the banking system. For this aim, the government may explicitly or implicitly urge a large, weak bank to acquire a small, weak bank. Unhealthy, inefficient banks may be willing to respond to such a request because they benefit from a subsidized deposit rate and are more likely to survive. Because our sample period covers Japan's banking crisis period of the 1990s, it is of particular interest whether bank consolidations were affected by the government's motive for restoring the financial stability.

If the government's motive for the stabilization of banking system affects the decision of M&As, an unhealthy bank tends to be consolidated with each other.

C. Managerial Empire Building

When corporate governance structures are weak, managers may be willing to acquire other banks for the purpose of empire-building. They may gain personal financial and non-financial gains from consolidated institutions. Managerial hubris may also drive bank mergers (Bliss and Rosen, 2001).

If managerial empire building motive drives M&As, then a consolidated bank cannot realize efficiency gains, and is not willing to downsize or restructure the business.

3. Bank Merger Wave in Japan

A very small number of mergers occurred in the banking industry until the 1980s in the post World War II period in Japan. The number of city banks, which operate nation-wide and internationally, had been 13 until 1990⁶. Mergers among regional banks, which operate mainly within a prefecture, also had been rare until the 1990s. Only one mutual bank (former second-tier regional bank) was acquired in the 1970s and two mutual banks were acquired in the 1980s.⁷ Mergers among

credit corporative banks (*shinkin*) did not occur frequently, either. A small number of mergers until the 1980s reflected the government's so-called "convoy system" policy⁸. Under this policy, the regulatory authorities tried to stabilize the banking system by restricting competition among banks and bailing out failing banks. The government restricted banks' opening new branches and prohibited banks from engaging in securities business to control competition. When a weak bank fell into financial distress, the government requested a healthy bank to rescue the weak bank by injecting capital and sending directors. Healthy banks responded to the government's request because they could obtain the branch networks of the failing banks. Until the 1980s, M&As in the banking industry occurred only when the government requested healthy banks to acquire failing banks.

As the financial liberalization was made progress in the 1980s, the regulatory authorities found it more and more difficult to maintain the convoy system; healthy banks had little incentive or capability to rescue failing banks. In the early 1990s, stock prices and land prices fell sharply, which hit hard banks' asset quality. Risk-based capital requirements based on the Basel capital standards, introduced in fiscal year 1992, spurred consolidation of weak banks. Two mergers among city banks⁹ and three mergers among regional banks occurred in the first half of the 1990s (Table 1). Mergers among *shinkin* banks also occurred more frequently in the 1990s than before.

A banking crisis occurred in 1997, when a city bank named Hokkaido Takushoku Bank failed. In 1998, two long-term credit banks named the Long-Term Credit Bank of Japan and the Nippon Credit Bank failed. The government tried to stabilize the financial system by recapitalizing weak banks and promoting their restructuring. Major banks tried to survive through mergers, resulting in the merger wave in the early 2000s. Financial Rehabilitation Plan, released by Takenaka, Minister of Financial Services Agency, in October 2002, forced major banks to apply strict accounting standards and to reduce their non-performing loan share to a half, urging weak banks to be consolidated.

Seven mergers among major banks occurred from FY 2000 to FY 2002. Mega banks are now reorganized into three groups (Mizuho, Mitsui-Sumitomo, and Mitsubishi-UFJ). The government also promoted consolidation of regional banks and *shinkin* banks. New legislation has enabled the government to recapitalize a consolidated bank¹⁰. Six mergers among regional banks occurred from FY 2000 to FY 2004. Merges among *shinkin* banks also accelerated in the early 2000s (Table 1).

4. Data and Overview of Bank Mergers

The data source of financial statements of major banks and regional banks is Nikkei Financial Quest and that of corporate banks (*shinkin*) is *Financial Statements of Shinkin Banks in Japan*, edited by Financial Book Consultants, Ltd. (*Kinyu tosho konsarutanto sha*). We identify an acquirer if the bank is legally surviving and a target if the bank has legally disappeared. We focus on the mergers and acquisitions of surviving banks by excluding from our dataset the transfers of business from a failed bank, because the latter is likely to be conducted for different motives and to have different consequences^{1 1}. Our dataset covers the period of fiscal year 1990 to 2004 for major and regional banks and fiscal year 1990 to 2001 for *shinkin* banks. For the details of the variables we use, see Appendix 1.

In the following analyses, we divide the sample banks into major banks (city banks, long-term credit banks^{1 2}, and trust banks), regional banks (first-tier regional banks and second-tier regional banks), and *shinkin* banks for the following reasons. First, a *shinkin* bank is a cooperative depository institution specialized to small- and medium- sized enterprise (SME) finance. Therefore, the motives and consequences of M&As might be different from corporations like major banks and regional banks. Second, while major banks operate nation-widely, regional banks and *shinkin* banks operate mainly within a prefecture. Most of the M&As among regional banks and *shinkin* banks were conducted by those banks that operated within the same prefecture (in-market merger)^{1 3}. The effects of mergers on market power might be different between major banks and regional or *shinkin* banks. Third, regulatory authorities' attitudes towards the non-performing loan problems were different between major banks, on one hand, and regional and *shinkin* banks, on the other hand, in the late 1990s and the early 2000s. The government aimed at quickly reducing the non-performing loans of major banks, while the government, afraid from the adverse effect of the write-off of non-performing loans on SME finance, did not force regional and *shinkin* banks to reduce non-performing loans quickly.

Table 1 shows the movements of the numbers of mergers and acquisitions for the sample period. The merger wave of *shinkin* banks began in the late 1990s, preceding waves of major banks and regional banks that occurred in the early 2000s.

Table 2 shows the descriptive sample statistics of the bank and market characteristics that we use in the following analyses. We compare the bank characteristics variables among the acquirers, targets, and the average. We

calculate the average for each of the three bank type: major banks, first-tier and second-tier regional banks, and *shinkin* banks. Table 2 suggests that targets and acquirers are less profitable, and more costly and less healthy than peers, though we do not control for macroeconomic shocks across different years in Table 2.¹⁴

Figure 1 compares some characteristics of acquirers and targets as compared with the average of each bank type. We follow the following three-step process to draw Figure 1. First, observing the financial statements of the acquirer and the target for the five years preceding the merger, we combine these statements to create pro forma financial ratios for a hypothetical combined bank. To calculate hypothetical premerger financial ratios, we calculate the weighted average of the acquirer and the target, where the total assets of the acquirer and the target are used as a weight¹⁵. Second, we calculate the post-merger bank's financial ratios for the actual combined bank using its financial statements for five years after the merger. Third, we normalize both the pre-merger and post-merger financial ratios of the acquirer and the combined bank, respectively, by subtracting off the same-year, bank-type average.

Those banks whose data is available at the merger year and a pre-merger year are included in the sample here. Similarly, those banks whose data is available only at the merger year and a post-merger year are included in the sample here. In Figure 1, simple averages of bank characteristics are depicted. Because we cannot compare accounting variables as of the year of M&As with the pre-merger or post-merger periods, we just connect a line for one year before M&As and one year after M&As. We look at the financial ratios that represent bank efficiency, market power, healthiness, and portfolio.

Panel A depicts the pre-merger and post-merger financial ratios of major banks, suggesting some interesting facts. First, the efficiency variables, ROA and the cost ratio, suggest that target banks were less efficient than the bank average and that ROA recovered slowly from an immediate deterioration after mergers. Second, the business scope variables, fees and commissions ratio, the loan-to-asset ratio, and the share of SME loans, suggest that though acquirers and targets tended to focus on traditional loan business before mergers, a consolidated bank began to extend their business to fee services. A consolidated bank increased the share of SME loans at first but eventually cut it bank to a pre-merger level, though it continued to increase the loan-to-asset ratio. Third, the market power variables measured by the deposit interest rate and the loan interest rate reveal that the deposit interest rate fell after mergers, while the loan interest rate did not show a

clear increasing tendency. Fourth, bank health variables, measured by the capital ratios (accounting capital-to-asset ratio and risk-based BIS capital ratio) and the non-performing ratios (defined by Bank Law and Financial Rehabilitation Law¹⁶), suggest that poorly capitalized banks tended to be an acquirer or a target, and that a consolidated bank suffered from decreasing capital ratios and increasing non-performing loans at least for three to four years after mergers.

Panel B of Figure 1 depicts the pre-merger and post-merger bank characteristics of regional banks. Like major banks, target banks were inefficient and poorly capitalized and that profitability and efficiency once deteriorated and then slowly recovered after consolidation. The recovery of bank health, measured by capital ratios or non-performing loans, after consolidation was also slow. Unlike major banks, a consolidated bank decreased the share of loans to SMEs after mergers.

Panel C of Figure 1 shows the pre-merger and post-merger bank characteristics of *shinkin* banks. Like major banks and regional banks, target banks were inefficient and unhealthy. The recovery of profitability, cost efficiency, or healthiness could not be seen clearly after M&As. Acquirers and targets tended to focus on traditional loan business before M&As and that a consolidated bank tended to focus more on loan business, unlike major banks. A consolidated bank raised the loan interest rate after M&As.

In the following sections, we statistically examine how the pre-merger bank characteristics affect the M&A decision and how M&As change bank performance.

5. Ex-ante Characteristics and the Decision of Consolidation

If value maximization motives drive consolidation, relatively profitable and efficient banks would tend to acquire relatively unprofitable and inefficient banks in order to spread superior expertise and management skills over the target bank. On the other hand, if the government's motives of stabilizing the nation-wide or local banking system drive consolidation, relatively unhealthy banks tend to be consolidated with each other. If managerial private incentive for empire-building is a major motive for mergers, bank efficiency or healthiness is not associated with the M&A decision.

To analyze the motives for consolidation, we estimate the multinomial logit model:

$$P_{t,j} = \frac{\exp(\beta' X_{t-1,j})}{\sum_{j=1}^3 \exp(\beta' X_{t-1,j})} \quad \text{for } j=1,2,3 \quad (1)$$

, where $P_{t,j}$ is the probability of the bank's choosing the variable j at time t ,

being an acquirer, a target, or neither. The dependent variable vector $X_{t-1,j}$

consists of bank profitability, efficiency, healthiness and size as well as other control variables including market concentration and macroeconomic variables. We choose ROA and the cost ratio for the efficiency variables and the capital-to-asset ratio for bank health measures. For the size variables, we use the logarithm of total assets (size) and the growth rate of total assets (size growth). As a degree of market concentration, we use the Herfindahl index for regional banks and *shinkin* banks. Finally, to control for macroeconomic shocks, we add the logarithm of prefectural GDP. All the explanatory variables are lagged by one-year. We estimate Eq. (1) for each bank type, major banks, regional banks, and *shinkin* banks. In addition to the full sample period (FY 1990-2004), we divide the sample period into the 1990s (FY 1990-2000) and the 2000s (FY 20001-2004). Though this period division may be somewhat arbitrary, we do so because the number of mergers of major banks and regional banks are almost the same between the two sub-periods. The regulatory authorities' attitudes toward major banks' non-performing loan problems became much severer in the 2000s than in the 1990s. So it would be useful to whether there would be difference in the motives of bank mergers between the 1990s and the 2000s.

Table 3A shows the estimation results for major banks. The first column shows the estimated coefficients and the second column shows estimated marginal effects. The full sample period estimation result shows that no pre-merger bank characteristics variable is significant. Looking at the sub-sample period estimation result for the 1990s, we see that while no pre-merger variable is significant in the acquirer equation, the capital ratio is positive and significant and the prefectural GDP is negative and significant in the target equation. On the other hand, for the sub-sample period estimation result for the 2000s, while no pre-merger variable is significant in the acquirer equation, the cost ratio is positive and significant in the target equation. Less cost efficient banks tended to be a target in the 2000s, as the value maximization hypothesis suggests.

Table 3B shows the estimation results for regional banks. The full sample

period estimation result shows that ROA and the asset growth ratio are positive and significant in the acquirer equation and that the cost ratio and the (logarithm of) total asset are negative and significant in the target equation. Looking at the sub-sample period estimation result for the 1990s, we see that while no pre-merger variable is significant in the acquirer equation, the (logarithm of) prefectural GDP is negative and significant in the target equation. On the other hand, for the sub-sample period estimation result for the 2000s, ROA is positive and significant and the capital ratio is negative and significant in the acquirer equation. In the target equation, the capital ratio and the (logarithm of) assets are negative and significant. In the 2000s, an efficient (measured by ROA) but unhealthy (measured by capital ratio) bank tended to be an acquirer, while a small and unhealthy bank tended to be a target. The fact that a profitable bank tended to be an acquirer in the 2000s is consistent with the value maximization hypothesis. On the other hand, the fact that poorly-capitalized banks tended to be either an acquirer or a target in the 2000s suggests that the regulatory authorities' motive for the stabilization of the local banking system affected the M&As among regional banks.

Table 3C displays the estimation results for *shinkin* banks. We conduct only the full sample period estimation (FY 1990-2001). Table 3C shows that, in the acquirer equation, the (logarithm of) asset is positive and significant, while, in the target equation, ROA and the (logarithm of) prefectural GDP are positive and significant and the cost ratio, the capital ratio, the (logarithm of) asset, and the asset growth, are negative and significant. These results suggest that in the case of *shinkin* banks, a large, but not necessarily cost efficient bank tended to be an acquirer, while a small, cost efficient, but poorly-capitalized *shinkin* bank tended to be a target. The fact that poorly-capitalized banks tended to be a target again suggests that the regulatory authorities' motive for the stabilization of the local banking system affected M&As among *shinkin* banks.

Overall, the value maximization motive seems to be valid only in the case of the 2000s' consolidation among major banks and regional banks. Regulators' motive for the stability of the local banking system affected the consolidation of regional banks in the 2000s. Regulators' motive also affected the consolidation of *shinkin* banks.

6. Post-Merger Performance

6.1 Background

Consolidation may have various effects on efficiency, market power, services

provided and healthiness.

First, consolidation may increase or decrease efficiency in various ways. A consolidated bank may be able to achieve a scale or scope economy. It may also improve X-efficiency by spreading superior acquirers' managerial skills over targets. On the other hand, it may take considerable time and costs to integrate different accounting and information systems, ways of doing business, and corporate cultures.

Second, consolidation may change the availability of loans and other financial services to small- and medium-sized enterprises (SMEs), though such changes may not be intended either by acquirers or targets. If consolidation improves efficiency, a more efficient consolidated bank may be able to serve more customers, including SMEs. On the other hand, if a large bank may find it costly to process relationship-based information due to its organizational complexity, a consolidated bank may reduce loans to the SMEs that are informationally opaque (Berger et al., 1999). Consolidated banks may also increase or reduce other services, including fee businesses, according to their comparative advantages.

Third, consolidation may strengthen market power, enabling the consolidated bank to raise loan interest rates or fall deposit interest rates. This is likely to occur when acquires and targets operated within the same local market (e.g., Berger et al., 1999).

Fourth, consolidation may improve or deteriorate healthiness. Although regulators may promote consolidations by weak banks, it is not clear whether weak banks can restore healthiness just through consolidation. On one hand, a consolidated bank may gain from risk diversification through investing various areas and industries (Berger et al., 1999). In addition, an acquirer may apply its superior risk management skills to a target. However, if poorly-capitalized banks are consolidated, a consolidated bank must be highly profitable to fill in the initial shortage of capital and then to recover its capital to a normal level, unless it raises capital from outside. In addition, a consolidated bank may be exposed to the risk of an unproportionally large amount of loans to some specific borrowers as compared with other banks as a result of the consolidation.¹⁷

6.2 Methodology¹⁸

We investigate the consequences of M&As by comparing the bank financial variables of pre-merger and post-merger periods. From the viewpoint of existing shareholders (or members of *shinkin* banks) of acquirers, it is natural to compare pre-merger acquiring banks and post-merger consolidated banks. On the other hand,

from the viewpoint of regulators and the banking system, it is useful to compare hypothetical pre-merger combined banks (that is, a weighted average of an acquirer and a target) and post-merger consolidated banks. We compare both.

Specifically, we first construct the financial ratios of the pre-merger hypothetical combined bank and the post-merger consolidated bank in the same way as in Figure 1. Note that we normalize all the pre-merger and post-merger financial ratios by subtracting off the same-year, bank-type average. Next, we take the pre-merger average of the hypothetical combined bank over the five years before mergers. If the pre-merger data is available for less than five years, we take the pre-merger average over the maximum years for which we can observe the data. Finally, we take the difference between the normalized pre-merger bank financial ratios and the normalized post-merger bank financial ratios. We look at the changes of the bank financial ratios for one to five years after mergers, respectively, though we report in Table 4 only one, three, and five years after mergers to save space. We also take the average of the post-merger financial ratios of the consolidated bank over the (at most) five years after mergers and take the difference between the pre-merger 5-year average and the post-merger 5-year average.

We perform the t-test for the null hypothesis that the difference between a normalized pre-merger financial ratio and a normalized post-merger financial ratio has mean zero. We also performed the Wilcoxon signed-rank test (z -statistic) for the null hypothesis that the difference between them has median zero and obtained qualitatively similar results for most financial ratios. So, we mainly report the t-test results below.

In this section, we select a sample where data on bank financial ratios are available for the merger year, one or more pre-merger years, and one or more post-merger years. The dataset here is different from that used in Figure 1, where we choose a sample where data were available for the merger year and one or more pre-merger years but not necessarily available for post-merger years and a sample where data were available for the merger year and one or more post-merger years but not necessarily available for pre-merger years.

6.3 Results

Major Banks

Table 4A shows the changes in the financial ratios of the consolidated bank from the hypothetical pre-merger combined bank for major banks. The first column shows the changes for the full sample period. Several facts are worth noting.

First, the changes in ROA are negative for the first three years and then turned to positive 5 years after mergers, though none of the changes is significant.

Second, the share of SME loans significantly increases three to five years after mergers. Acquirers seems to have spread its skills necessary to make SME loans to targets, resulting in increases in SME loans. This is different from U.S. bank merger evidences. Berger et al. (1999) summarizes existing evidences as follows:

The most common findings are that consolidations of large banking organizations tend to reduce small business lending, whereas consolidations involving small organizations tend to increase small business lending, although there are exceptions. (pp. 170).

Third, the change in fees and commissions is positive, suggesting that a consolidated bank tends to extend its business to new fee services, though the changes are not significant (except for the z-statistic for the change 5 years after merger).

Fourth, the change in the average loan growth rate over the post-merger five years is significantly negative, suggesting that mergers triggered asset restructuring.

Fifth, the change in the average deposit interest rate is negative and significant 5 years after mergers, while the changes in the loan interest rate are not significant. A consolidated major bank did not seem to be able to exert market power in the loan market. This is not surprising, given that both acquiring major banks and target major banks operated nation-wide.

Sixth, the changes in the capital-to-asset ratios are negative and significant for up to three post-merger years and the changes in the risk-based BIS capital ratios are also negative and significant (for t-statistics) for three post-merger years. The improvement of ROA after the merger was not quick or sufficient to offset the initial gap of the capital ratios between consolidated banks (i.e., acquirers and targets) and their peers.

Finally, the changes in the bad loan ratios, based either on Bank Law or Financial Rehabilitation Act, are positive and significant 3 years after mergers. Consolidated banks may have applied a stricter standard to recognize non-performing loans than before, resulting in the increase in disclosed non-performing loans. In addition, a consolidated bank may have been exposed to the risk of an unproportionally large amount of loans to some specific borrowers as a result of the consolidation. When those borrowers fell in financial distress, the consolidated bank may have continued to lend to them in order to avoid their

failures, which would cause a sharp decrease in bank capital.¹⁹

The second and third columns of Table 4A report the changes in post-merger performance from the hypothesized pre-merger combined bank for the sub-periods of the 1990s (FY 1990-2000) and the 2000s (FY2001-2004), respectively. The changes in fees and commissions and the share of SME loans are significantly positive only for the 1990s, while the changes in the loan-to-asset ratio and the loan growth rate are significantly negative only for the 2000s. The mergers in the 1990s seem to have been expansionary in the business scope, while the mergers in the 2000s seem to have been more directed to asset restructuring, though the long-run effects of the mergers in the early 2000s may not have been realized yet.

The fourth column of Table 4A shows the changes of the performance of consolidated banks from the pre-merger acquirer's level for the full sample period. Most of the changes from the pre-merger acquirer's level are qualitatively the same as the changes from the pre-merger hypothetical combined bank, except that the changes in the share of SME loans is not significant, possibly because the pre-merger acquirer's share of SME loans was higher than the average of major banks.

Regional Banks

Table 4B shows the changes in the financial ratios the consolidated regional banks. The first column shows the changes of a consolidated bank from the pre-merger hypothetical combined bank for the full sample period. Like major banks, the changes in ROA are negative, though not significant, for the first three years and then turn to positive and significant (for t-statistics) five years after mergers. This increase in ROA is caused partly by a strong market power of a consolidated bank in the loan market, which can be seen by the positive and significant change in the loan interest rate three and more years after mergers. The changes in the capital-to-asset ratio are negative up to five years after mergers, though significant only one year after mergers. The improvement of ROA after the merger was too slow and small to offset the initial gap of the capital ratios between consolidated banks and their peers.

Dividing the sample period into the 1990s and the 2000s (the second and the third columns), we see that the changes in the capital-to-asset ratio are negative and significant for both periods, while the change in the loan interest rate is positive and significant only in the 1990s and the change in the fees and commissions is positive and significant (for z-statistics) only in the 2000s.

The last column shows the changes of performance of a consolidated bank from the pre-merger acquirer for the full sample period. The changes from the pre-merger acquire are qualitatively the same as the changes from the pre-merger hypothetical combined bank.

Corporate (Shinkin) Banks

Table 4C shows the changes in the financial ratios of the consolidated *shinkin* banks for the full sample period. Considering that the sample period of *shinkin* banks is only up to fiscal year 2001, we did not divide the sample period. The first column shows the changes from the hypothetical pre-merger combined bank. Some financial ratios change in similar ways to those of major or regional banks. First, the changes in ROA are negative up to three post-merger years and then turn to positive and significant (for z-statistics) 5 years after M&As. Second, the changes in the loan interest rate are positive and significant up to three years after M&As. Third, the capital-to-asset ratio and the risk-based capital ratio (BIS) are both negative and significant for most of the post-merger years.

The second column shows the changes in the financial ratios of a consolidated bank from the pre-merger acquirer. Most of them are similar to the changes from a pre-merger hypothetical combined bank, except that the changes in the loan growth rates are negative and significant up to five years after M&As.

We may summarize the post-merger performance of consolidated banks as follows. First, consolidated banks tended to go through a decline in ROA at first and then to increase ROA about five years after mergers, though this recovery was not significant for the mergers of major banks. It seems to take considerable time and costs to integrate different information systems and other business methods. Second, in the case of the M&As by regional banks or *shinkin* banks, consolidated banks tended to raise interest rates on loans, suggesting that their market power was strengthened within the prefecture they operate in. This is consistent with the U.S. evidence, showing that in-market consolidation strengthens market power. Third, the changes in services provided are different by bank type and by period. Consolidated major banks tended to expand new fee business and SME loans in the 1990s. Fourth, consolidated banks did not recover bank health after mergers. The capital-to-asset ratio tended to decrease rather than to increase regardless of bank type. The recovery of ROA was too slow and small to fill in the initial gap of the capital-to-asset-ratio between consolidated banks and their peers. In addition,

consolidated banks did not decrease non-performing loans. Finally, consolidated banks tended to decelerate the loan growth rate, suggesting that consolidated banks tried to restructure assets and to downsize. Managerial empire building hypothesis does not seem to be valid in Japan.

7. Conclusion

The recent waves of mergers and acquisitions (M&As) in the banking industries across the world raise important questions of whether mergers enhance the efficiency of consolidated banks and contribute to the stabilization of the banking sector. We investigate the motives and consequences of the consolidation of banks in Japan during the period of fiscal year 1990 to fiscal year 2004.

Our analysis concerning the relationship between ex-ante bank characteristics and the decision of M&As suggests as follows. First, in the early 2000s, efficient banks tended to acquire an inefficient bank except for the M&As of cooperative (*shinkin*) banks. This finding is consistent with the value-maximization hypothesis. Second, large but unhealthy banks tended to acquire small and unhealthy banks in the case of M&As of regional banks or *shinkin* banks, which suggests that the M&As of those banks were affected by regulators' attempt at stabilizing the local financial system through consolidations.

Our investigation of post-merger performance suggests as follows. First, consolidated banks tended to go through a decline in ROA at first and then to increase ROA about five years after mergers. Second, in-market consolidation enabled consolidated banks to raise the loan interest rate. Third, consolidated banks tended to decrease the capital-to asset ratio and not to decrease non-performing loans. Finally, consolidated banks tended to restrain loan growths.

In sum, our analysis suggests that regulators' attempt at stabilizing the local financial market through consolidations played an important role in the M&As conducted by regional banks or credit cooperative (*shinkin*) banks, though their attempt does not seem to have been successful. Shareholders' motive for value maximization also seems to have driven the M&As conducted by major banks and regional banks in the early 2000s. We obtain no evidence that supports managerial motives for empire building.

Footnotes

¹ City banks and regional banks are both corporations licensed under Bank Law, while *shinkin* banks are cooperatives of small and medium sized enterprises (SMEs) licensed under Shinkin Bank Law. Regional banks are classified into first-tier and second-tier regional banks according to the associations they belong to. There is usually one, relatively large first-tier regional bank in each prefecture, and there are some, relatively large second-tier regional banks in one prefecture.

² See also Yamori and Harimaya (2005) for the study of the mergers of *shinkin* banks.

³ We could analyze the impact of merger announcement on abnormal returns for the mergers of listed, major banks (e.g., Okada, 2005). However, it would still be difficult to analyze the long-run performance of stock returns even for the mergers of listed, major banks, because most of the consolidated major banking firms newly established holding companies that owned the share of other financial institutions (e.g., nonbanks, securities companies, and credit card companies). For the pitfalls of using short-run responses of stock market prices to merger announcement when mergers are a relatively new phenomenon, see Delong and Deyoung (2007).

⁴ As of March 2001, for example, the share of deposits at city banks, first-tier regional banks, second-tier regional banks, and *shinkin* banks are 29.2%, 25.5%, 8.2%, and 15.1%, respectively. Data source is Bank of Japan web site: www.boj.or.jp.

⁵ No merger was conducted across different types of banks during the sample period, and there was one sale of business of a failed bank across bank types: the business of the failed city bank, Hokkaido thTakushoku Bank, was sold to a regional bank, Hokuyo Bank and a trust bank, Chuo Trust Bank in 1997.

⁶ Mitsui Bank acquired Taiyo Kobe in 1990.

⁷ Hirosaki Sogo Bank was acquired by Seiwa Bank in 1976. Takachiho Sogo Bank was acquired by Nishinippon Sogo bank in 1984. Heiwa Sogo Bank was acquired by Sumitomo Bank in 1986.

⁸ For the details of the convoy system, see Hoshi and Kashyap (2001).

⁹ Taiyo Kobe Bank was acquired by Mitsui Bank in 1990 and Saitama Bank was acquired by Kyowa Bank in 1991.

¹⁰ Special Measures Law for the Promotion of Financial Institutions Reorganization was enacted in October, 2002. Under this law, the government recapitalized Kanto Tsukuba Bank in September 2003. Financial Function Reinforcement Law was enacted in April 2004 to enable the government to preemptively capitalize healthy regional and *shinkin* banks. Under this law, Kiyoh Holdings and Howa Bank were recapitalized in 2006.

¹¹ The transfer of business from a failed bank is identified if the deposit insurance made financial assistance (not recapitalization) to the bank that acquired or purchased the business of another bank.

¹² Long-term credit banks are those banks that were established for the purpose of long-term corporate finance and permitted to issue long-term bonds exclusively under Long-term Credit Bank Law. Though three long-term credit banks were established after WWII, two of them (i.e., Long-Term Credit Bank of Japan and the Nippon Credit Bank) failed in 1998, and one (i.e., Industrial Bank of Japan) was merged with city banks (Fuji Bank and Daiichi-Kangyo Bank) and reorganized in 2002.

¹³ Among the M&As by regional banks or *shinkin* banks, only four (two M&As by

regional and two M&As by *shinkin* banks) were conducted across prefectural borders.

¹⁴ The differences in the interest rates on deposits and loans, in particular, seem to reflect the fact that a large number of M&As occurred in the latter half of the 1990s, when Bank of Japan conducted an extremely-low-interest-rate policy.

¹⁵ If three and more banks merged, the series of the targets are a weighted sum of the targets and the series of the hypothetical combined bank are a weighted sum of the targets and acquirers. In both series, we use total assets as weights.

¹⁶ Non-performing loans (NPLs) defined by Bank Law are the sum of loans to failed borrowers, delinquent loans, loans delinquent for more than three months, and loans with the terms alleviated, all classified by each loan. NPLs defined by Financial Rehabilitation Law are all the claimable assets other than the normal ones whose debtors have no financial problems, classified by debtors' financial conditions. Banks are required to disclose both types of NPLs.

¹⁷ The following example may be useful. Tokai Bank, Sanwa Bank, Fuji bank and Sumitomo Bank each had almost equal amounts (more than 500 billion yens) of loans outstanding to a large retail company, Daiei, which was in financial distress. It is said that UFJ Bank, formed from the consolidation of Tokai Bank and Sanwa Bank, was saddled with a distinguished amount (more than one trillion yens) of loans to Daiei for a long time after the consolidation.

¹⁸ The approach here is similar to Delong and Deyoung (2007).

¹⁹ Such a behavior is called "ever-greening" (Peek and Rosen, 2005) or "zombie lending" (Caballero, Hoshi, and Kashyap, 2006).

Data Appendix

- $ROA = \frac{\text{Current Profit}}{\text{Total Asset}} \times 100$
- $Cost\ Ratio = \frac{\text{Personnel Expenditure} + \text{Nonpersonnel Expenditure} + \text{Taxes}}{\text{Total Asset}} \times 100$
- $Fees\ and\ Commissions = \frac{\text{Fees and Commissions}}{\text{Total Asset}} \times 100$
- $Loan\text{-to}\text{-Asset}\ Ratio = \frac{\text{Loans Outstanding}}{\text{Total Asset}} \times 100$
- $Loans\ to\ SMEs = \frac{\text{Loans to SMEs}}{\text{Total Asset}} \times 100$
- $Loan\ Growth\ Rate = \text{Growth Rate of Loans Outstanding} \times 100$
- $Deposit\ Interest\ Rate = \frac{\text{Interest on Deposits}}{\text{Deposits Outstanding}} \times 100$
- $Loan\ Interest\ Rate = \frac{\text{Interest on Loans}}{\text{Loans Outstanding}} \times 100$
- $Capital\text{-to}\text{-Asset}\ Ratio = \frac{\text{Equity Capital}}{\text{Total Asset}} \times 100$
- $Risk\text{-Based}\ Capital\ Ratio\ (BIS) = \frac{\text{Regulatory Capital}}{\text{Risk Asset}} \times 100\ (\text{Based on BIS})$
- $Non\text{-Performing}\ Loan\ Ratio\ (BL) = \frac{\text{Non-Performing Loan Based on Bank Law}}{\text{Total Asset}} \times 100$
- $Non\text{-Performing}\ Loan\ Ratio\ (FRL) = \frac{\text{Non-Performing Loan Based on Financial Revitalization Law}}{\text{Total Asset}} \times 100$
- $Ln\ Asset = \ln(\text{Total Asset})$
- $Asset\ Growth\ Rate = \text{Growth Rate of Total Asset} \times 100$
- $Herfindahl\ Index = \text{Prefectural Herfindahl Index (calculated by deposits outstanding of regional and shinkin banks)}$
- $Ln\ GDP = \ln(\text{Gross Prefectural Domestic Product})$

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Table 1. Number of Banks and number of mergers and acquisitions (M&As)

	Major Banks			Regional Banks			Cooperative (Shinkin) Banks		
	Number of Banks	Number of Mergers	Number of Sale of Business	Number of Banks	Number of Mergers	Number of Sale of Business	Number of Banks	Number of Mergers	Number of Sale of Business
1990	22	1	0	132	0	0	440	3	0
1991	21	1	0	132	1	0	435	4	0
1992	21	0	0	130	1	1 (1)	428	5	0
1993	21	0	0	129	1	0	421	8	0
1994	21	0	0	129	0	0	416	4	0
1995	21	0	0	129	0	1 (1)	410	5	1
1996	20	1	0	128	0	0	401	8	0
1997	19	0	1 (1)	126	0	1 (1)	396	3 (1)	0
1998	19	0	0	124	0	3 (3)	386	5 (2)	1 (1)
1999	19	0	0	123	0	1 (1)	371	7 (2)	8 (8)
2000	18	1	0	119	1	1 (1)	349	11	6 (5)
2001	15	3	0	117	0	0	326	15	6 (6)
2002	13	3	0	116	0	0	-	-	-
2003	13	0	0	110	2	0	-	-	-
2004	13	0	0	107	3	0	-	-	-
Total	276	10	1 (1)	1,851	9	8 (8)	4,779	78 (5)	22 (20)

Notes

1. Major banks include city banks, long-term credit banks, and trust banks. Regional banks include first-tier regional banks and second-tier regional banks.
2. The number of parentheses denotes the number of mergers or acquisitions of the business of a failed bank.
3. No merger was implemented across bank types during the sample period, and one sales of business of a failed bank was conducted across bank. types bank (in the case of the failure of Hokkaido Takushoku Bank in 1997).

Table 2. Descriptive Sample Statistics

	Major Banks			Regional Banks			Cooperative (<i>Shinkin</i>) Banks		
	Acquirer	Target	All	Acquirer	Target	All	Acquirer	Target	All
	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.
<i>ROA</i>	-0.305 (1.082)	-0.463 (0.782)	-0.280 (1.160)	0.132 (0.367)	-0.064 (0.485)	-0.181 (2.177)	0.083 (0.481)	-0.297 (0.988)	0.143 (1.095)
<i>Cost Ratio</i>	0.858 (0.347)	0.952 (0.657)	0.872 (0.408)	1.425 (0.252)	1.477 (0.169)	1.447 (0.262)	1.610 (0.205)	1.708 (0.348)	1.628 (0.246)
<i>Fees and Commissions</i>	0.279 (0.128)	0.315 (0.257)	0.268 (0.173)	0.252 (0.104)	0.199 (0.098)	0.203 (0.060)	0.159 (0.040)	0.154 (0.042)	0.156 (0.041)
<i>Loan-to-Asset Ratio</i>	55.109 (8.048)	56.851 (7.010)	56.582 (8.454)	70.855 (5.284)	71.819 (4.432)	69.518 (7.022)	61.244 (7.086)	58.585 (9.742)	58.795 (8.554)
<i>Loans to SMEs</i>	34.972 (9.494)	33.885 (11.699)	35.665 (10.618)	61.251 (9.014)	64.117 (6.249)	57.705 (10.601)			
<i>Loan Growth Rate</i>	3.906 (8.977)	-2.248 (8.458)	0.861 (18.458)	9.482 (23.322)	-0.410 (5.327)	1.976 (7.609)	1.068 (4.269)	-2.808 (5.552)	2.489 (8.961)
<i>Deposit Interest Rate</i>	1.706 (1.872)	1.484 (1.875)	2.697 (2.217)	1.486 (2.082)	1.792 (2.277)	1.558 (1.677)	1.214 (1.387)	1.096 (1.373)	1.499 (1.510)
<i>Loan Interest Rate</i>	2.927 (2.014)	2.792 (1.705)	3.667 (2.040)	3.849 (2.224)	4.511 (2.155)	3.849 (1.774)	4.076 (1.516)	3.949 (1.569)	4.362 (1.614)
<i>Capital-to-Asset Ratio</i>	3.997 (1.255)	4.044 (1.537)	4.111 (1.655)	3.269 (0.680)	3.111 (1.359)	3.753 (3.223)	4.934 (1.458)	4.070 (1.955)	5.379 (2.272)
<i>Risk-Based Capital Ratio (BIS)</i>	10.628 (1.705)	10.538 (1.433)	11.728 (2.784)	7.302 (1.313)	6.148 (1.698)	8.896 (3.569)	8.860 (3.147)	7.185 (3.439)	9.861 (4.171)
<i>Non-Performing Loan Ratio (BL)</i>	7.701 (4.702)	8.507 (6.452)	9.628 (7.782)	9.399 (3.030)	9.586 (2.618)	7.028 (4.929)	9.688 (6.422)	14.152 (6.691)	8.342 (5.792)
<i>Non-Performing Loan Ratio (FRL)</i>	7.904 (4.749)	8.689 (6.522)	8.952 (6.736)	9.481 (3.190)	10.330 (3.561)	7.739 (4.679)			
<i>Ln Asset</i>	17.133 (0.933)	16.953 (1.206)	16.847 (0.979)	14.267 (0.564)	13.672 (0.736)	14.214 (0.887)	19.375 (0.882)	18.278 (0.890)	18.884 (0.963)
<i>Asset Growth Rate</i>	7.924 (9.910)	-2.650 (8.420)	-0.414 (16.932)	9.174 (21.634)	1.986 (4.548)	1.546 (8.382)	1.773 (3.203)	-1.219 (8.629)	2.985 (8.803)
<i>Herfindahl Index</i>	0.056 (0.030)	0.069 (0.058)	0.055 (0.027)	0.335 (0.183)	0.312 (0.114)	0.343 (0.161)	0.276 (0.171)	0.257 (0.175)	0.297 (0.177)
<i>Ln GPD</i>	18.171 (0.303)	18.058 (0.552)	18.091 (0.371)	16.105 (1.036)	15.912 (0.975)	15.977 (0.912)	16.536 (1.111)	16.662 (1.170)	16.355 (1.036)
<i>Number of Observations</i>	8	11	276	9	8	1,851	59	74	5,472

Table 3. Multinomial Logistic Regression Results for M&A choices

Panel A. M&As of major banks

	1990-2004		1990-2000		2001-2004	
	Coefficient	Merginal Effect	Coefficient	Merginal Effect	Coefficient	Merginal Effect
Acquirer						
<i>ROA</i>	-0.052 (0.332)	-0.001 (0.008)	1.059 (1.182)	0.003 (0.007)	-0.139 (0.556)	-0.009 (0.032)
<i>Cost Ratio</i>	0.622 (1.471)	0.014 (0.036)	0.836 (2.195)	0.002 (0.009)	0.507 (2.411)	0.018 (0.140)
<i>Capital-to-Asset Ratio</i>	-0.103 (0.351)	-0.003 (0.009)	-0.428 (0.705)	-0.001 (0.003)	-0.162 (0.534)	-0.009 (0.030)
<i>Ln Asset</i>	0.257 (0.650)	0.006 (0.016)	-0.109 (0.963)	0.000 (0.003)	0.414 (0.947)	0.019 (0.054)
<i>Asset Growth Rate</i>	0.014 (0.012)	0.000 (0.000)	0.023 (0.026)	0.000 (0.000)	-0.001 (0.019)	0.000 (0.001)
<i>Ln GDP</i>	0.957 (1.402)	0.024 (0.033)	9.724 (13.190)	0.027 (0.038)	-0.786 (1.619)	-0.042 (0.093)
<i>Cons</i>	-25.403 (25.666)		-178.330 (236.203)		4.939 (30.367)	
Target						
<i>ROA</i>	-0.096 (0.256)	-0.003 (0.008)	1.301 (1.492)	0.002 (0.003)	0.161 (0.459)	0.009 (0.023)
<i>Cost Ratio</i>	1.951 (1.400)	0.061 (0.040)	-7.275 (4.803)	-0.011 (0.014)	3.441 * (1.995)	0.180 (0.119)
<i>Capital-to-Asset Ratio</i>	0.169 (0.277)	0.005 (0.009)	1.623 ** (0.707)	0.003 (0.003)	-0.090 (0.450)	-0.004 (0.024)
<i>Ln Asset</i>	0.939 (0.665)	0.029 (0.019)	-0.655 (1.604)	-0.001 (0.003)	1.515 (1.023)	0.079 (0.053)
<i>Asset Growth Rate</i>	-0.009 (0.024)	0.000 (0.001)	0.052 (0.047)	0.000 (0.000)	-0.076 (0.054)	-0.004 ** (0.002)
<i>Ln GDP</i>	-1.070 (0.728)	-0.034 (0.021)	-3.792 *** (1.480)	-0.006 (0.008)	-1.129 (1.589)	-0.057 (0.080)
<i>Cons</i>	-2.230 (14.079)		73.379 * (41.165)		-9.816 (30.741)	
Number of Observations	283		224		59	
Pseudo R-sq	0.037		0.209		0.132	
Log Likelihood	-79.51		-31.71		-30.89	

Notes

1. The probability of being an acquirer or a target as compared with being neither of them is estimated using the maximum-likelihood estimator.
2. Standard errors are in parentheses.
3. ***, **, and * represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 3. Multinomial Logistic Regression Results for M&A choices

Panel B. M&As of regional banks

	1990-2004		1990-2000		2001-2004	
	Coefficient	Merginal Effect	Coefficient	Merginal Effect	Coefficient	Merginal Effect
Acquirer						
<i>ROA</i>	0.291 *	0.001	0.188	0.000	5.868 ***	0.002
	(0.176)	(0.001)	(0.389)	(0.001)	(2.044)	(0.003)
<i>Cost Ratio</i>	-0.288	-0.001	0.360	0.001	4.974	0.002
	(2.117)	(0.009)	(3.370)	(0.009)	(4.070)	(0.003)
<i>Capital-to-Asset Ratio</i>	-0.148	-0.001	-0.136	0.000	-2.060 ***	-0.001
	(0.101)	(0.000)	(0.222)	(0.001)	(0.739)	(0.001)
<i>Ln Asset</i>	-0.010	0.000	0.028	0.000	1.631	0.001
	(0.612)	(0.003)	(0.956)	(0.002)	(1.350)	(0.001)
<i>Asset Growth Rate</i>	0.022 *	0.000 *	0.015	0.000	0.009	0.000
	(0.012)	(0.000)	(0.042)	(0.000)	(0.017)	(0.000)
<i>Ln GDP</i>	0.236	0.001	-0.281	-0.001	-0.440	0.000
	(0.570)	(0.002)	(0.881)	(0.002)	(0.847)	(0.000)
<i>Herfindahl Index</i>	1.192	0.005	0.946	0.002	-0.261	0.000
	(3.092)	(0.013)	(4.362)	(0.011)	(4.971)	(0.002)
<i>Cons</i>	-8.512		-2.255		-20.272	
	(15.402)		(24.571)		(25.291)	
Target						
<i>ROA</i>	0.226	0.001	0.195	0.000	2.859	0.005
	(0.228)	(0.001)	(0.375)	(0.000)	(2.195)	(0.004)
<i>Cost Ratio</i>	-4.458 **	-0.012 *	-4.205	-0.004	-4.640	-0.008
	(2.127)	(0.006)	(3.093)	(0.004)	(4.139)	(0.012)
<i>Capital-to-Asset Ratio</i>	-0.164	0.000	-0.233	0.000	-0.975 *	-0.002
	(0.120)	(0.000)	(0.187)	(0.000)	(0.590)	(0.002)
<i>Ln Asset</i>	-1.590 ***	-0.004 **	-1.539	-0.002	-1.645 *	-0.003
	(0.600)	(0.002)	(0.955)	(0.001)	(0.944)	(0.003)
<i>Asset Growth Rate</i>	-0.033	0.000	0.002	0.000	-0.150	0.000
	(0.056)	(0.000)	(0.055)	(0.000)	(0.154)	(0.000)
<i>Ln GDP</i>	-0.586	-0.002	-1.676	-0.002	0.356	0.001
	(0.596)	(0.002)	(0.905) *	(0.001)	(0.904)	(0.002)
<i>Herfindahl Index</i>	-4.202	-0.011	-10.644	-0.011	1.109	0.002
	(3.600)	(0.009)	(6.518)	(0.008)	(4.734)	(0.009)
<i>Cons</i>	34.629 **		52.362 **		22.845	
	(15.544)		(23.924)		(22.737)	
Number of Observations	1,872		1,411		461	
Pseudo R-sq	0.056		0.075		0.271	
Log Likelihood	-102.54		-50.79		-36.85	

See the notes to Panel A.

Table 3. Multinomial Logistic Regression Results for M&A choices

Panel C. M&As of cooperative (*shinkin*) banks

	1990-2001	
	Coefficient	Marginal Effect
Acquirer		
<i>ROA</i>	0.105 (0.144)	0.001 (0.001)
<i>Cost Ratio</i>	0.420 (0.680)	0.004 (0.007)
<i>Capital-to-Asset Ratio</i>	-0.071 (0.085)	-0.001 (0.001)
<i>Ln Asset</i>	0.598 *** (0.171)	0.006 *** (0.002)
<i>Asset Growth Rate</i>	-0.029 (0.026)	0.000 (0.000)
<i>Ln GDP</i>	0.106 (0.220)	0.001 (0.002)
<i>Herfindahl Index</i>	1.178 (1.217)	0.012 (0.012)
<i>Cons</i>	-18.164 *** (5.091)	
Target		
<i>ROA</i>	0.436 *** (0.111)	0.003 *** (0.001)
<i>Cost Ratio</i>	-1.339 *** (0.429)	-0.010 *** (0.003)
<i>Capital-to-Asset Ratio</i>	-0.268 *** (0.072)	-0.002 *** (0.001)
<i>Ln Asset</i>	-1.018 *** (0.140)	-0.007 *** (0.001)
<i>Asset Growth Rate</i>	-0.133 *** (0.026)	-0.001 *** (0.000)
<i>Ln GDP</i>	0.630 *** (0.225)	0.005 *** (0.002)
<i>Herfindahl Index</i>	0.738 (1.318)	0.005 (0.009)
<i>Cons</i>	7.803 * (4.379)	
<hr/>		
Number of Observations	5,173	
Pseudo R-sq	0.094	
Log Likelihood	-658.74	

See the notes to Panel A.

Table 4. Post-Merger Performance
Panel A. M&As of major banks

Change from:	Pre-Merger Combined Bank			Pre-Merger Acquirer
	1990-2004	1990-2000	2001-2004	1990-2004
<i>ROA</i>				
<i>ΔROA (1-year post-merger)</i>	-0.602			-0.613
<i>ΔROA (3-year post-merger)</i>	-0.200			-0.212
<i>ΔROA (5-year post-merger)</i>	0.149			0.125
<i>ΔROA (post-merger average)</i>	-0.219	0.056	-0.402	-0.230
<i>ROA (post-merger average)</i>	-0.088	0.140	-0.240	-0.088
<i>ROA (pre-merger average)</i>	0.131 ^{b**}	0.083	0.163 ^{c**}	0.142 ^{b**}
<i>Cost Ratio</i>				
<i>ΔCost Ratio (1-year post-merger)</i>	-0.012			-0.051
<i>ΔCost Ratio (3-year post-merger)</i>	-0.015			-0.054
<i>ΔCost Ratio (5-year post-merger)</i>	-0.058			-0.124
<i>ΔCost Ratio (post-merger average)</i>	-0.018	-0.028	-0.012	-0.058
<i>Cost Ratio (post-merger average)</i>	-0.082	-0.005	-0.134	-0.082
<i>Cost Ratio (pre-merger average)</i>	-0.064	0.023	-0.122	-0.025
<i>Fees and Commissions</i>				
<i>ΔFees and Commissions (1-year post-merger)</i>	0.020			-0.014
<i>ΔFees and Commissions (3-year post-merger)</i>	0.079			-0.032
<i>ΔFees and Commissions (5-year post-merger)</i>	0.110 [*]			0.048 ^{c*}
<i>ΔFees and Commissions (post-merger average)</i>	0.006	0.081 ^c	-0.055 [*]	-0.029
<i>Fees and Commissions (post-merger average)</i>	-0.050 [*]	0.011	-0.099 ^{b**}	-0.050 [*]
<i>Fees and Commissions (pre-merger average)</i>	-0.056 ^{b**}	-0.071	-0.044 ^{a**}	-0.021
<i>Loan-to-Asset Ratio</i>				
<i>ΔLoan-to-Asset Ratio (1-year post-merger)</i>	-1.183			-1.345
<i>ΔLoan-to-Asset Ratio (3-year post-merger)</i>	-0.235			-0.398
<i>ΔLoan-to-Asset Ratio (5-year post-merger)</i>	2.498			1.817
<i>ΔLoan-to-Asset Ratio (post-merger average)</i>	-1.037	3.807	-4.267 ^{c**}	-1.200
<i>Loan-to-Asset Ratio (post-merger average)</i>	1.338	5.123	-1.185	1.338
<i>Loan-to-Asset Ratio (pre-merger average)</i>	2.376	1.316	3.082	2.538
<i>Loans to SMEs</i>				
<i>ΔLoans to SMEs (1-year post-merger)</i>	2.559			0.903
<i>ΔLoans to SMEs (3-year post-merger)</i>	3.262 ^{b**}			1.605
<i>ΔLoans to SMEs (5-year post-merger)</i>	2.105 ^{b*}			-2.496
<i>ΔLoans to SMEs (post-merger average)</i>	2.565 ^c	3.931 ^{c*}	1.199	0.908
<i>Loans to SMEs (post-merger average)</i>	2.857	2.829	2.885	2.857
<i>Loans to SMEs (pre-merger average)</i>	0.292	-1.103	1.686	1.949
<i>Loan Growth Rate</i>				
<i>ΔLoan Growth Rate (1-year post-merger)</i>	-4.417 [*]			-5.503 ^{c*}
<i>ΔLoan Growth Rate (3-year post-merger)</i>	-2.760			-3.784
<i>ΔLoan Growth Rate (5-year post-merger)</i>	-4.478			-6.387
<i>ΔLoan Growth Rate (post-merger average)</i>	-3.058 ^{b**}	-1.989	-3.771 ^{b**}	-4.082 ^{b**}
<i>Loan Growth Rate (post-merger average)</i>	-4.100 ^{a***}	-2.641 ^{c*}	-5.072 ^{a**}	-4.100 ^{a***}
<i>Loan Growth Rate (pre-merger average)</i>	-1.042 ^c	-0.652	-1.301 ^{c*}	-0.018
<i>Deposit Interest Rate</i>				
<i>ΔDeposit Interest Rate (1-year post-merger)</i>	-0.055			0.052
<i>ΔDeposit Interest Rate (3-year post-merger)</i>	0.008			0.114
<i>ΔDeposit Interest Rate (5-year post-merger)</i>	-0.354 ^{c*}			-0.249
<i>ΔDeposit Interest Rate (post-merger average)</i>	-0.058	-0.101	-0.030	0.048
<i>Deposit Interest Rate (post-merger average)</i>	-0.174	-0.375	-0.039	-0.174
<i>Deposit Interest Rate (pre-merger average)</i>	-0.115	-0.274	-0.009	-0.222 ^c
<i>Loan Interest Rate</i>				
<i>ΔLoan Interest Rate (1-year post-merger)</i>	-0.082			-0.069
<i>ΔLoan Interest Rate (3-year post-merger)</i>	0.062			0.075
<i>ΔLoan Interest Rate (5-year post-merger)</i>	-0.057			-0.010
<i>ΔLoan Interest Rate (post-merger average)</i>	-0.001	0.129 [*]	-0.088	0.012
<i>Loan Interest Rate (post-merger average)</i>	0.036	0.063	0.018	0.036
<i>Loan Interest Rate (pre-merger average)</i>	0.037	-0.066	0.106 ^c	0.024

Table 4. Post-Merger Performance
Panel A. M&As of major banks (Continued from previous page)

Change from:	Pre-Merger Combined Bank			Pre-Merger Acquirer
	1990-2004	1990-2000	2001-2004	1990-2004
<i>Capital-to-Asset Ratio</i>				
Δ Capital-to-Asset Ratio (1-year post-merger)	-0.926	a***		-0.949 a***
Δ Capital-to-Asset Ratio (3-year post-merger)	-1.319	a**		-1.342 a**
Δ Capital-to-Asset Ratio (5-year post-merger)	-0.509	*		-0.498 c*
Δ Capital-to-Asset Ratio (post-merger average)	-1.158	a***	-0.747 *	-1.432 b**
Capital-to-Asset Ratio (post-merger average)	-1.434	a***	-0.719 a*	-1.911 a**
Capital-to-Asset Ratio (pre-merger average)	-0.275	*	0.028	-0.478 a**
<i>Risk-Based Capital Ratio (BIS)</i>				
Δ Risk-Based Capital Ratio (BIS) (1-year post-merger)	-0.678			-0.257
Δ Risk-Based Capital Ratio (BIS) (3-year post-merger)	-2.108	b		-1.788 b*
Δ Risk-Based Capital Ratio (BIS) (5-year post-merger)				
Δ Risk-Based Capital Ratio (BIS) (post-merger average)	-1.376		-1.376	-1.104
Risk-Based Capital Ratio (BIS) (post-merger average)	-1.430	c*	-1.430	-1.595 c*
Risk-Based Capital Ratio (BIS) (pre-merger average)	-0.054		-0.054	-0.490
<i>Non-Performing Loan Ratio (BL)</i>				
Δ Non-Performing Loan Ratio (BL) (1-year post-merger)	3.272	c*		3.455 b**
Δ Non-Performing Loan Ratio (BL) (3-year post-merger)	4.118	b*		4.301 a**
Δ Non-Performing Loan Ratio (BL) (5-year post-merger)				
Δ Non-Performing Loan Ratio (BL) (post-merger average)	3.697	b*	4.400 b**	3.880 b**
Non-Performing Loan Ratio (BL) (post-merger average)	0.095		-0.038	-0.487
Non-Performing Loan Ratio (BL) (pre-merger average)	-3.602	b*	-4.438 b**	-3.785 b**
<i>Non-Performing Loan Ratio (FRL)</i>				
Δ Non-Performing Loan Ratio (FRL) (1-year post-merger)	2.662			2.908 b**
Δ Non-Performing Loan Ratio (FRL) (3-year post-merger)	3.589	b*		3.835 b**
Δ Non-Performing Loan Ratio (FRL) (5-year post-merger)				
Δ Non-Performing Loan Ratio (FRL) (post-merger average)	3.202	c*	3.852 c**	3.448 b**
Non-Performing Loan Ratio (FRL) (post-merger average)	0.338		0.237	-0.140
Non-Performing Loan Ratio (FRL) (pre-merger average)	-2.864	c*	-3.615 b**	-3.110 b*

Notes

1. The columns under the heading of “Pre-Merger Combined Bank” denote the average changes from the pre-merger hypothetical combined bank that is a weighted average of an acquirer and a target.
2. The column under the heading of “Pre-Merger Acquirer” denotes the average changes from the pre-merger acquirer. ΔX (t-year post-merger) is the difference of the variable X between t-year post-merger and the pre-merger average over five years (or less if data is not available).
3. ΔX (post-merger average) is the difference between X(post-merger average) and X(pre-merger average), where X(post-merger average) is the post-merger average of the variable X over five years (or less if data is not available) and X(pre-merger average) is the pre-merger average of the variable X over five years (or less if data not available).
4. a, b, c denote significance at the 1 percent, 5 percent, and 10 percent, respectively, for the null hypothesis that ΔX (or X) has zero mean.
5. ***, **, *, denote significance at the 1 percent, 5 percent, and 10 percent, respectively, for the Wilcoxon signed-rank test for the null hypothesis that ΔX (or X) has median zero.

Table 4. Post-Merger Performance
Panel B. M&As of regional banks

Change from:	Pre-Merger Combined Bank			Pre-Merger Acquirer
	1990-2004	1990-2000	2001-2004	1990-2004
<i>ROA</i>				
<i>ΔROA (1-year post-merger)</i>	-0.170			-0.229
<i>ΔROA (3-year post-merger)</i>	-1.869			-1.934
<i>ΔROA (5-year post-merger)</i>	0.504 ^b			0.481 ^b
<i>ΔROA (post-merger average)</i>	-0.471	-0.615	-0.327	-0.530
<i>ROA (post-merger average)</i>	-0.463	-0.709	-0.217	-0.463
<i>ROA (pre-merger average)</i>	0.008	-0.094	0.110	0.067
<i>Cost Ratio</i>				
<i>ΔCost Ratio (1-year post-merger)</i>	0.024			0.036
<i>ΔCost Ratio (3-year post-merger)</i>	-0.003			0.021
<i>ΔCost Ratio (5-year post-merger)</i>	-0.084			-0.045
<i>ΔCost Ratio (post-merger average)</i>	0.009	0.010	0.009	0.021
<i>Cost Ratio (post-merger average)</i>	0.068	0.071	0.066	0.068
<i>Cost Ratio (pre-merger average)</i>	0.059	0.061	0.057	0.047
<i>Fees and Commissions</i>				
<i>ΔFees and Commissions (1-year post-merger)</i>	0.026			0.007
<i>ΔFees and Commissions (3-year post-merger)</i>	0.013			-0.001
<i>ΔFees and Commissions (5-year post-merger)</i>	-0.003			-0.010
<i>ΔFees and Commissions (post-merger average)</i>	0.034	0.004	0.063 [*]	0.014
<i>Fees and Commissions (post-merger average)</i>	0.052	0.004	0.099	0.052
<i>Fees and Commissions (pre-merger average)</i>	0.018	0.000	0.036	0.038 ^{b**}
<i>Loan-to-Asset Ratio</i>				
<i>ΔLoan-to-Asset Ratio (1-year post-merger)</i>	-1.334			-0.474
<i>ΔLoan-to-Asset Ratio (3-year post-merger)</i>	-2.131			-0.623
<i>ΔLoan-to-Asset Ratio (5-year post-merger)</i>	-3.387			-2.100
<i>ΔLoan-to-Asset Ratio (post-merger average)</i>	-2.163	-1.892	-2.434	-1.303
<i>Loan-to-Asset Ratio (post-merger average)</i>	0.207	-0.434	0.848	0.207
<i>Loan-to-Asset Ratio (pre-merger average)</i>	2.370 ^{b**}	1.457	3.283 ^{b*}	1.510
<i>Loans to SMEs</i>				
<i>ΔLoans to SMEs (1-year post-merger)</i>	-0.586			0.808
<i>ΔLoans to SMEs (3-year post-merger)</i>	-1.337			0.283
<i>ΔLoans to SMEs (5-year post-merger)</i>	-2.344			-0.993
<i>ΔLoans to SMEs (post-merger average)</i>	-1.535	-1.103	-1.967	-0.141
<i>Loans to SMEs (post-merger average)</i>	2.171	1.175	3.168 ^{c*}	2.171
<i>Loans to SMEs (pre-merger average)</i>	3.706 ^{c**}	2.278	5.135 ^{c*}	2.312
<i>Loan Growth Rate</i>				
<i>ΔLoan Growth Rate (1-year post-merger)</i>	-0.176			-0.148
<i>ΔLoan Growth Rate (3-year post-merger)</i>	-3.471			-3.587
<i>ΔLoan Growth Rate (5-year post-merger)</i>	-1.928			-2.549
<i>ΔLoan Growth Rate (post-merger average)</i>	-0.846	-1.307	-0.384	-0.818
<i>Loan Growth Rate (post-merger average)</i>	-2.433 ^{c**}	-1.741	-3.125 [*]	-2.433 ^{c**}
<i>Loan Growth Rate (pre-merger average)</i>	-1.587	-0.433	-2.741 ^{b*}	-1.615
<i>Deposit Interest Rate</i>				
<i>ΔDeposit Interest Rate (1-year post-merger)</i>	-0.036			-0.008
<i>ΔDeposit Interest Rate (3-year post-merger)</i>	-0.010			0.015
<i>ΔDeposit Interest Rate (5-year post-merger)</i>	0.125			0.143
<i>ΔDeposit Interest Rate (post-merger average)</i>	-0.006	0.005	-0.017	0.023
<i>Deposit Interest Rate (post-merger average)</i>	0.000	0.021	-0.020 ^{b*}	0.000
<i>Deposit Interest Rate (pre-merger average)</i>	0.006	0.015	-0.003	-0.022
<i>Loan Interest Rate</i>				
<i>ΔLoan Interest Rate (1-year post-merger)</i>	0.087			0.196 ^{b**}
<i>ΔLoan Interest Rate (3-year post-merger)</i>	0.187 ^{b*}			0.269 ^{c*}
<i>ΔLoan Interest Rate (5-year post-merger)</i>	0.177 ^b			0.221
<i>ΔLoan Interest Rate (post-merger average)</i>	0.069	0.145 ^{c*}	-0.006	0.178 ^{b**}
<i>Loan Interest Rate (post-merger average)</i>	0.194 ^{c*}	0.133	0.256 ^{a*}	0.194 ^{c*}
<i>Loan Interest Rate (pre-merger average)</i>	0.125	-0.012	0.261 ^{b*}	0.016

Table 4. Post-Merger Performance
Panel B. M&As of regional banks (Continued from previous page)

Change from:	Pre-Merger Combined Bank			Pre-Merger Acquirer
	1990-2004	1990-2000	2001-2004	1990-2004
<i>Capital-to-Asset Ratio</i>				
<i>ΔCapital-to-Asset Ratio (1-year post-merger)</i>	-0.761 b**			-0.863 b**
<i>ΔCapital-to-Asset Ratio (3-year post-merger)</i>	-0.371			-0.416
<i>ΔCapital-to-Asset Ratio (5-year post-merger)</i>	-0.202			-0.283
<i>ΔCapital-to-Asset Ratio (post-merger average)</i>	-0.892 b**	-0.410 *	-1.374 b*	-0.995 b**
<i>Capital-to-Asset Ratio (post-merger average)</i>	-1.149 a**	-0.721	-1.578 b*	-1.149 a**
<i>Capital-to-Asset Ratio (pre-merger average)</i>	-0.257	-0.310	-0.204	-0.155
<i>Risk-Based Capital Ratio (BIS)</i>				
<i>ΔRisk-Based Capital Ratio (BIS) (1-year post-merger)</i>	-1.052			-1.042
<i>ΔRisk-Based Capital Ratio (BIS) (3-year post-merger)</i>				
<i>ΔRisk-Based Capital Ratio (BIS) (5-year post-merger)</i>				
<i>ΔRisk-Based Capital Ratio (BIS) (post-merger average)</i>	-0.543		-0.543	-0.718
<i>Risk-Based Capital Ratio (BIS) (post-merger average)</i>	-1.993 a**		-1.993 b*	-1.907 a**
<i>Risk-Based Capital Ratio (BIS) (pre-merger average)</i>	-1.449 b*		-1.449 b*	-1.190
<i>Non-Performing Loan Ratio (BL)</i>				
<i>ΔNon-Performing Loan Ratio (BL) (1-year post-merger)</i>	0.717			0.775
<i>ΔNon-Performing Loan Ratio (BL) (3-year post-merger)</i>				
<i>ΔNon-Performing Loan Ratio (BL) (5-year post-merger)</i>				
<i>ΔNon-Performing Loan Ratio (BL) (post-merger average)</i>	0.813		1.080	0.870
<i>Non-Performing Loan Ratio (BL) (post-merger average)</i>	3.394 c*		3.449	3.394 c*
<i>Non-Performing Loan Ratio (BL) (pre-merger average)</i>	2.581		2.369	2.524
<i>Non-Performing Loan Ratio (FRL)</i>				
<i>ΔNon-Performing Loan Ratio (FRL) (1-year post-merger)</i>	1.453			0.487
<i>ΔNon-Performing Loan Ratio (FRL) (3-year post-merger)</i>				
<i>ΔNon-Performing Loan Ratio (FRL) (5-year post-merger)</i>				
<i>ΔNon-Performing Loan Ratio (FRL) (post-merger average)</i>	1.478		1.478	0.560
<i>Non-Performing Loan Ratio (FRL) (post-merger average)</i>	3.424 b**		3.424 b*	3.402 b**
<i>Non-Performing Loan Ratio (FRL) (pre-merger average)</i>	1.946 *		1.946 *	2.842 **

See the notes to Panel A.

Table 4. Post-Merger Performance
Panel C. M&As of corporative (*shinkin*) banks

Change from:	Pre-Merger Combined Bank	Pre-Merger Acquirer
	1990-2001	1990-2001
<i>ROA</i>		
<i>ΔROA (1-year post-merger)</i>	-0.015	-0.039
<i>ΔROA (3-year post-merger)</i>	-0.035	-0.053
<i>ΔROA (5-year post-merger)</i>	0.118 *	0.101
<i>ΔROA (post-merger average)</i>	0.002	-0.022
<i>ROA (post-merger average)</i>	-0.010	-0.013
<i>ROA (pre-merger average)</i>	-0.013	0.009
<i>Cost Ratio</i>		
<i>ΔCost Ratio (1-year post-merger)</i>	0.016	0.014
<i>ΔCost Ratio (3-year post-merger)</i>	0.002	-0.010
<i>ΔCost Ratio (5-year post-merger)</i>	0.018	-0.013
<i>ΔCost Ratio (post-merger average)</i>	0.003	0.002
<i>Cost Ratio (post-merger average)</i>	-0.025	-0.026
<i>Cost Ratio (pre-merger average)</i>	-0.028	-0.028
<i>Fees and Commissions</i>		
<i>ΔFees and Commissions (1-year post-merger)</i>	-0.001	0.000
<i>ΔFees and Commissions (3-year post-merger)</i>	0.002	0.002
<i>ΔFees and Commissions (5-year post-merger)</i>	0.004	0.002
<i>ΔFees and Commissions (post-merger average)</i>	0.002	0.002
<i>Fees and Commissions (post-merger average)</i>	0.003	0.004
<i>Fees and Commissions (pre-merger average)</i>	0.001	0.001
<i>Loan-to-Asset Ratio</i>		
<i>ΔLoan-to-Asset Ratio (1-year post-merger)</i>	0.663	0.079
<i>ΔLoan-to-Asset Ratio (3-year post-merger)</i>	0.690	-0.145
<i>ΔLoan-to-Asset Ratio (5-year post-merger)</i>	1.181	0.234
<i>ΔLoan-to-Asset Ratio (post-merger average)</i>	0.804	0.230
<i>Loan-to-Asset Ratio (post-merger average)</i>	3.019 a***	3.182 a***
<i>Loan-to-Asset Ratio (pre-merger average)</i>	2.215 a***	2.953 a***
<i>Loan Growth Rate</i>		
<i>ΔLoan Growth Rate (1-year post-merger)</i>	-0.601	-1.783 b**
<i>ΔLoan Growth Rate (3-year post-merger)</i>	-0.886	-1.837 a**
<i>ΔLoan Growth Rate (5-year post-merger)</i>	-0.688	-1.807 c*
<i>ΔLoan Growth Rate (post-merger average)</i>	-0.630	-1.782 b***
<i>Loan Growth Rate (post-merger average)</i>	-1.802 a***	-1.754 a***
<i>Loan Growth Rate (pre-merger average)</i>	-1.172 a***	0.028 *
<i>Deposit Interest Rate</i>		
<i>ΔDeposit Interest Rate (1-year post-merger)</i>	0.022	0.027
<i>ΔDeposit Interest Rate (3-year post-merger)</i>	0.032	0.046
<i>ΔDeposit Interest Rate (5-year post-merger)</i>	0.008	0.034
<i>ΔDeposit Interest Rate (post-merger average)</i>	0.014	0.020
<i>Deposit Interest Rate (post-merger average)</i>	0.016	0.013
<i>Deposit Interest Rate (pre-merger average)</i>	0.001	-0.008
<i>Loan Interest Rate</i>		
<i>ΔLoan Interest Rate (1-year post-merger)</i>	0.064 *	0.038
<i>ΔLoan Interest Rate (3-year post-merger)</i>	0.112 c**	0.073 *
<i>ΔLoan Interest Rate (5-year post-merger)</i>	0.106	0.052
<i>ΔLoan Interest Rate (post-merger average)</i>	0.070 c*	0.044
<i>Loan Interest Rate (post-merger average)</i>	0.002	-0.007
<i>Loan Interest Rate (pre-merger average)</i>	-0.068 *	-0.051

Table 4. Post-Merger Performance

Panel C. M&As of corporative (*shinkin*) banks (Continued from previous page)

Change from:	Pre-Merger	
	Combined Bank 1990-2001	Pre-Merger Acquirer 1990-2001
<i>Capital-to-Asset Ratio</i>		
<i>ΔCapital-to-Asset Ratio (1-year post-merger)</i>	-0.510 a***	-0.633 a***
<i>ΔCapital-to-Asset Ratio (3-year post-merger)</i>	-0.586 b**	-0.710 a***
<i>ΔCapital-to-Asset Ratio (5-year post-merger)</i>	-0.512	-0.600 *
<i>ΔCapital-to-Asset Ratio (post-merger average)</i>	-0.531 a***	-0.654 a***
<i>Capital-to-Asset Ratio (post-merger average)</i>	-0.969 a***	-0.990 a***
<i>Capital-to-Asset Ratio (pre-merger average)</i>	-0.438 a***	-0.335
<i>Risk-Based Capital Ratio (BIS)</i>		
<i>ΔRisk-Based Capital Ratio (BIS) (1-year post-merger)</i>	-0.908 a***	-1.280 a***
<i>ΔRisk-Based Capital Ratio (BIS) (3-year post-merger)</i>	-1.508 c*	-1.801 b**
<i>ΔRisk-Based Capital Ratio (BIS) (5-year post-merger)</i>	-3.331 b	-3.354 b
<i>ΔRisk-Based Capital Ratio (BIS) (post-merger average)</i>	-0.969 a***	-1.311 a***
<i>Risk-Based Capital Ratio (BIS) (post-merger average)</i>	-1.973 a***	-1.924 a***
<i>Risk-Based Capital Ratio (BIS) (pre-merger average)</i>	-1.004 a***	-0.613 b*
<i>Non-Performing Loan Ratio (BL)</i>		
<i>ΔNon-Performing Loan Ratio (BL) (1-year post-merger)</i>	0.630	1.348 c
<i>ΔNon-Performing Loan Ratio (BL) (3-year post-merger)</i>	0.697	1.565
<i>ΔNon-Performing Loan Ratio (BL) (5-year post-merger)</i>	0.842	1.338
<i>ΔNon-Performing Loan Ratio (BL) (post-merger average)</i>	0.625	1.426 b**
<i>Non-Performing Loan Ratio (BL) (post-merger average)</i>	0.706	0.840
<i>Non-Performing Loan Ratio (BL) (pre-merger average)</i>	0.081 c	-0.586

See the notes to Panel A.

Figure 1. Pre-merger and post-merger bank performance
 Panel A. M&As of major banks

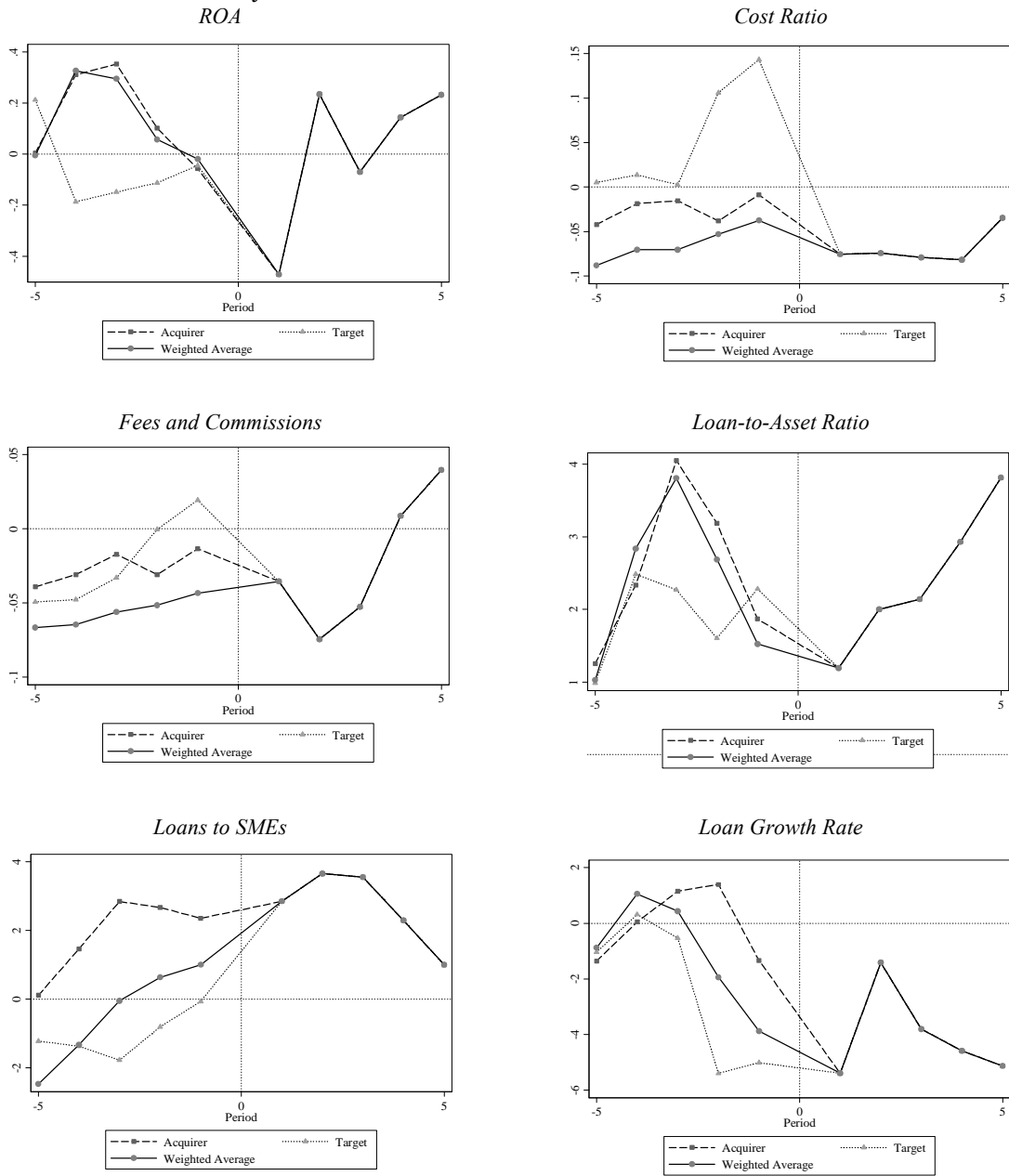
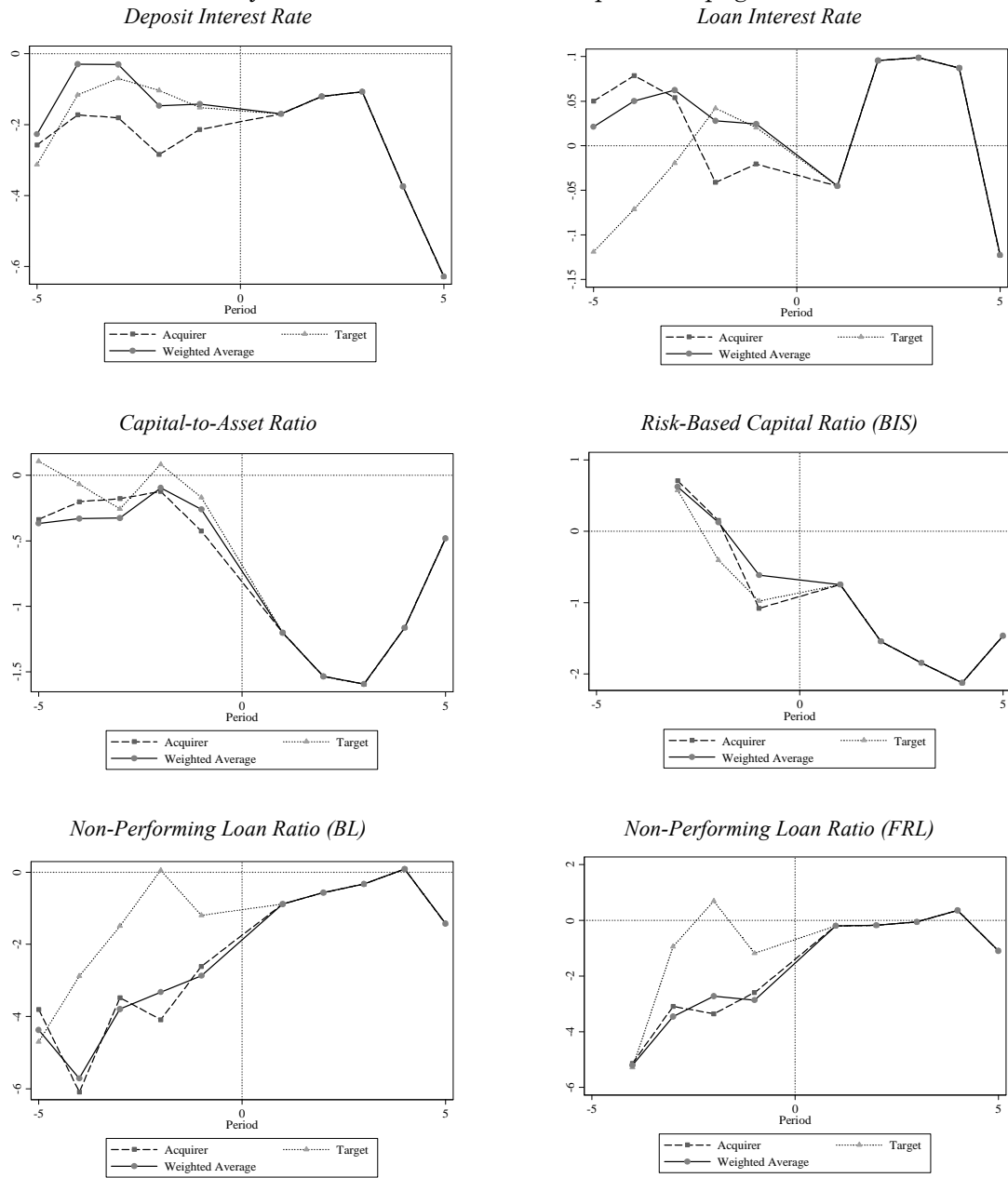


Figure 1. Pre-merger and Post-merger bank performance
 Panel A. M&As of major banks (Continued from previous page)



Notes

1. Period zero designates the year when the bank merger occurred. Negative periods denote pre-merger years and positive periods denote post-merger years.
2. We connect the period (-1) value and period (+) value with a straight line.
3. *Weighted average* denotes the hypothetical pre-merger combined bank, calculated as a weighted average of the acquirer and the target with their total assets being used as weights.

Figure 1. Pre-merger and post-merger bank performance
 Panel B. M&As of regional banks

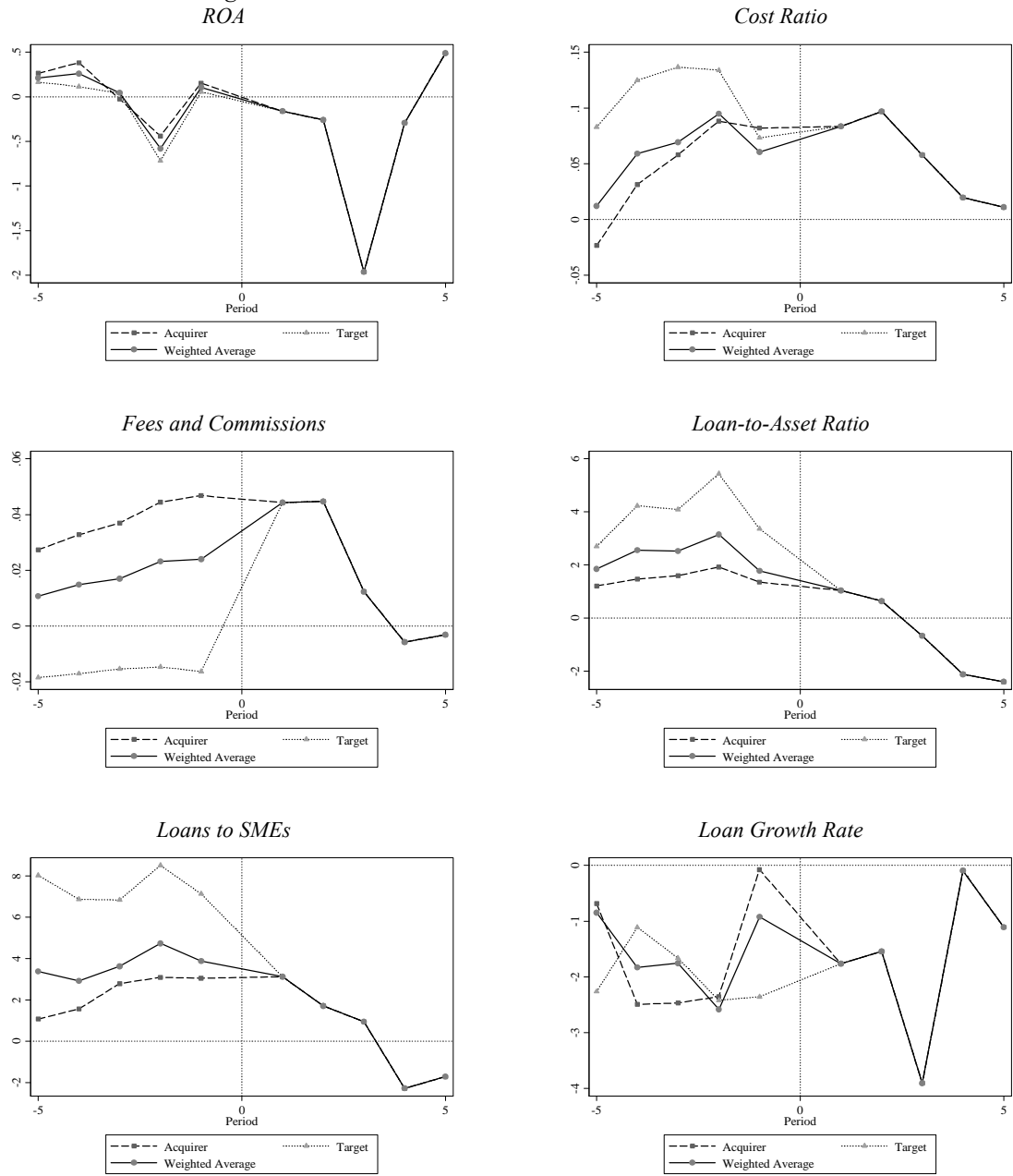
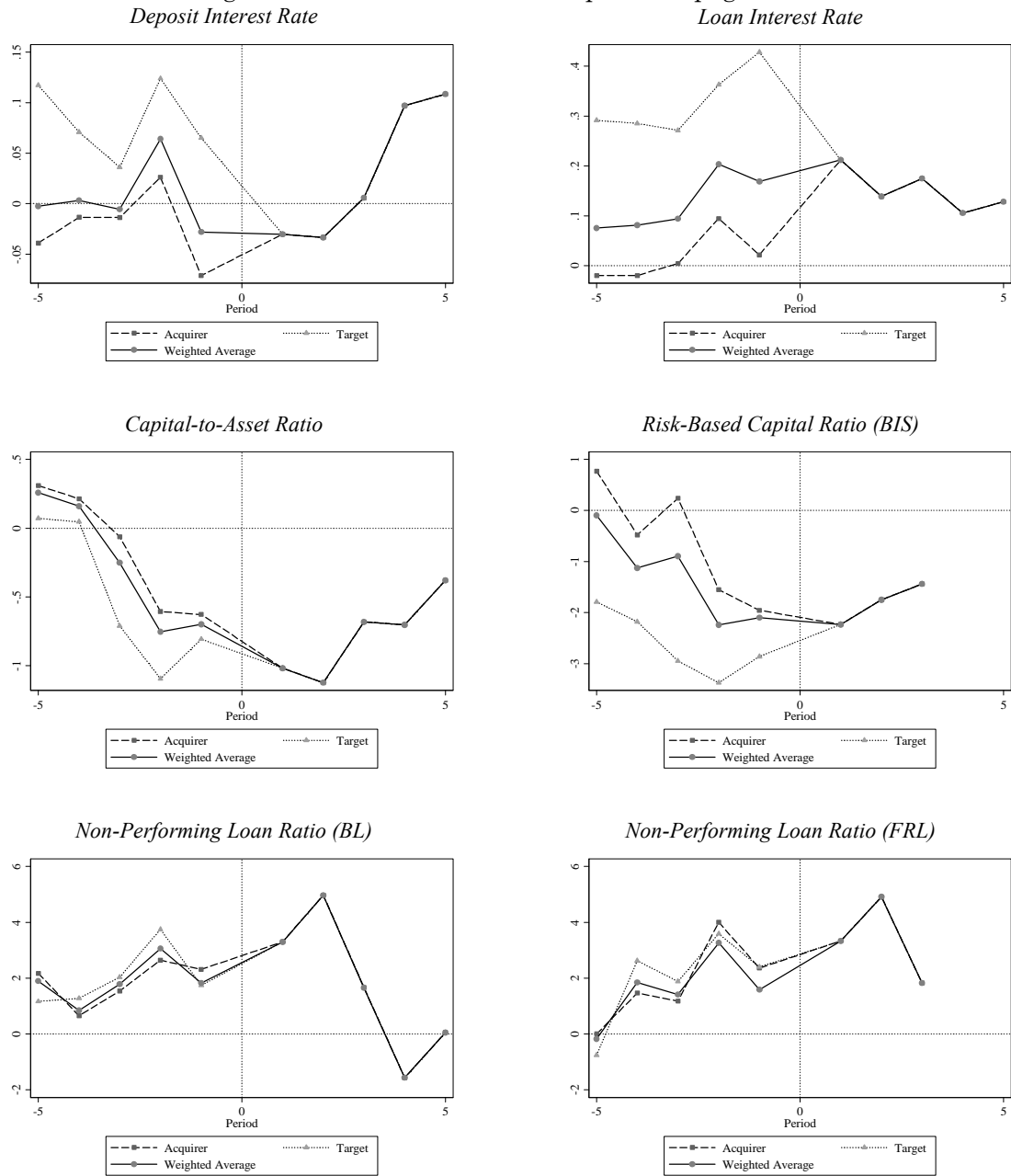


Figure 1. Pre-merger and post-merger bank performance
 Panel B. M&As of regional banks (Continued from previous page)



See the notes to Panel A.

Figure 1. Pre-merger and post-merger bank performance
 Panel C. M&As of cooperative (*shinkin*) banks

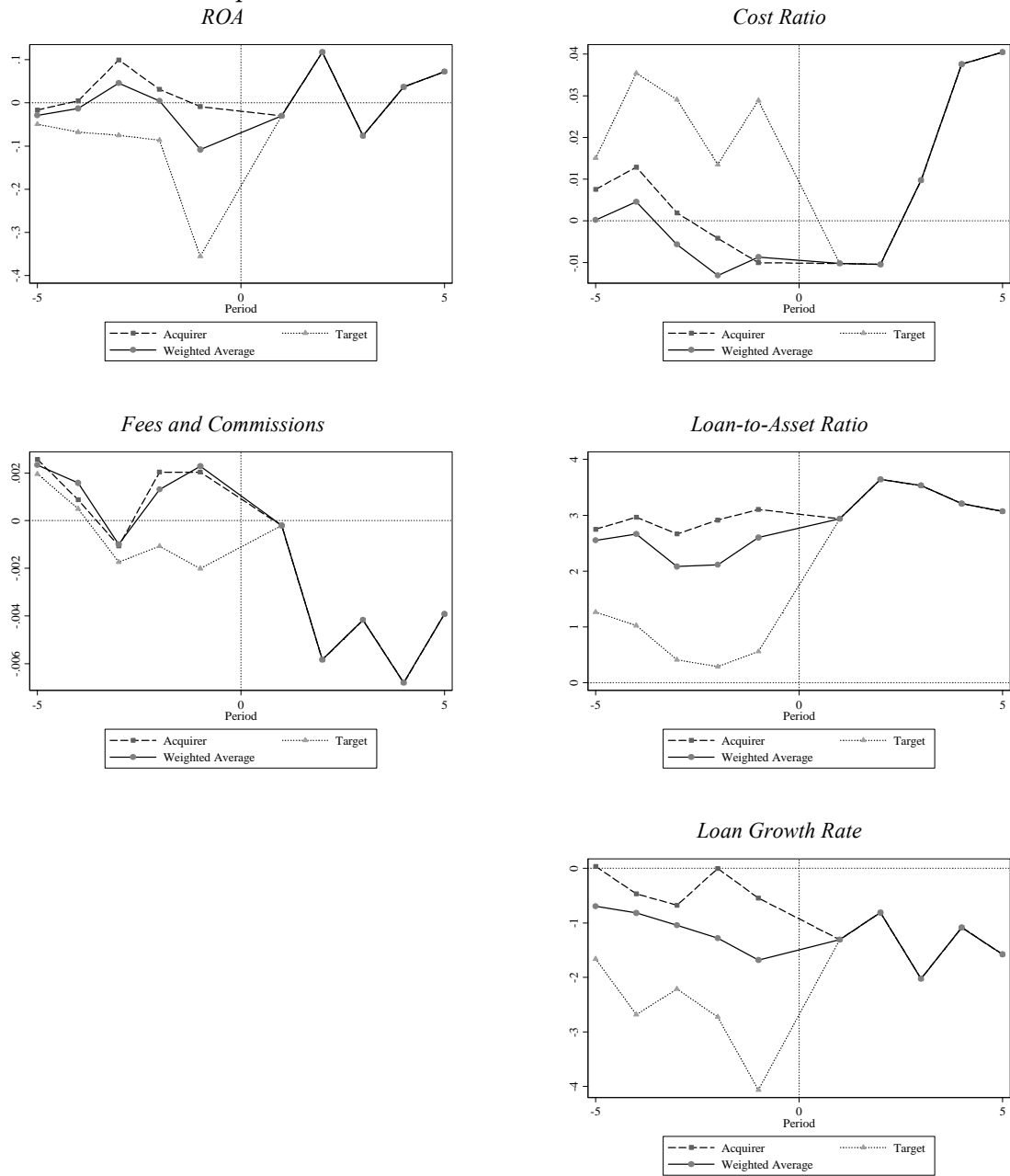
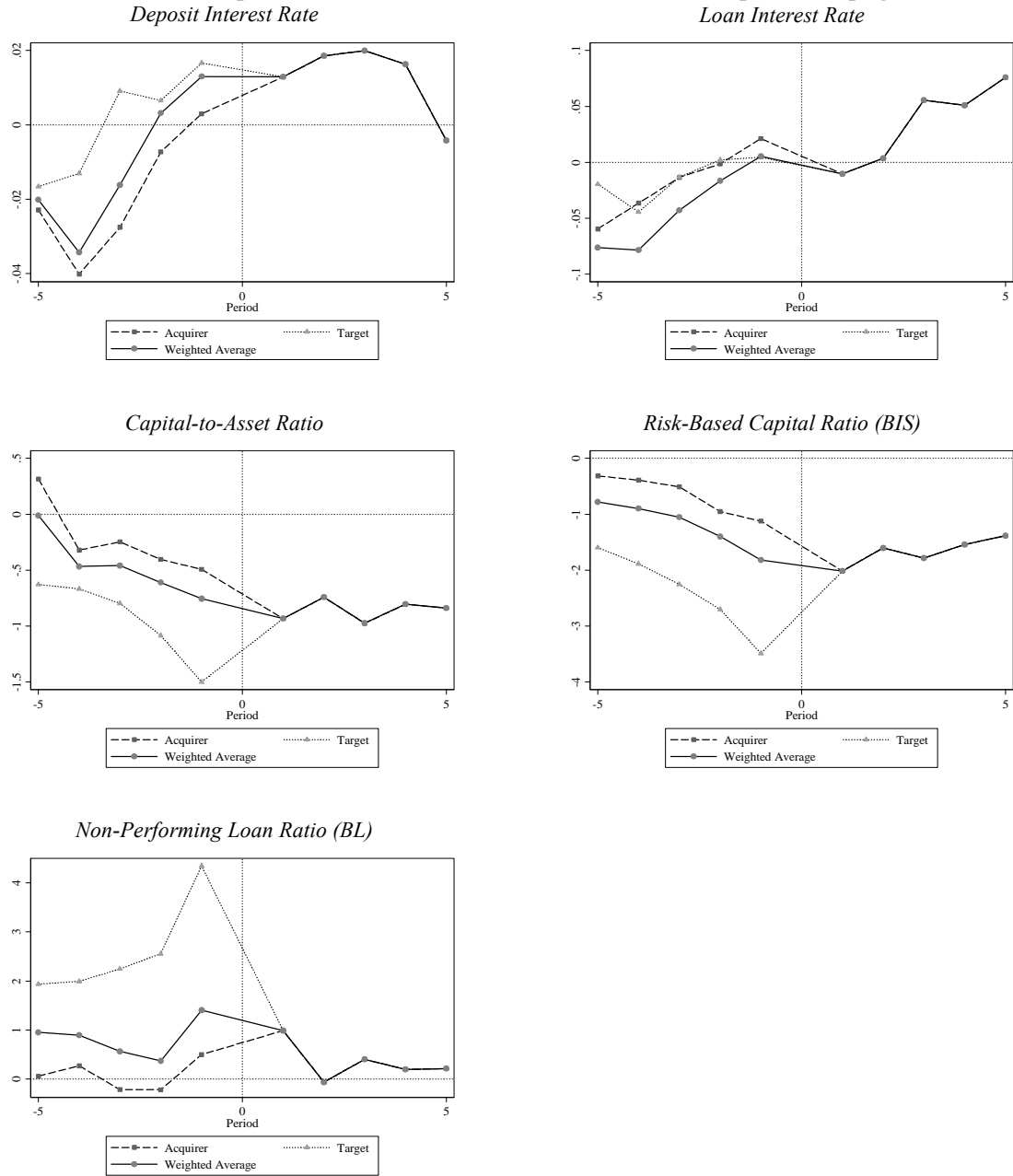


Figure 1. Pre-merger and post-merger bank performance
 Panel C. M&As of cooperative (*shinkin*) banks (Continued from previous page)



See the notes to Panel A.