RIETI Discussion Paper Series 06-E-034

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This Draft July 27, 2006

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Abstract

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Key Words: Bank Mergers, Efficiency, Stability, Japan

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The authors are grateful for helpful comments and suggestions on our early draft by Allen N. Berger, Masaya Sakuragawa, Gregory F. Udell, Nobuyoshi Yamori, and other participants at the symposium and seminars of RIETI and Gakushuin University.

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We investigate the motives and consequences of the consolidation of cooperative banks (*Shinkin*) in Japan during the period 1984-2002. Our major findings are as follows. First, less profitable and less cost efficient banks are more likely to be an acquirer and a target, though even less profitable and less cost efficient banks are more likely to be a target rather than an acquirer. In addition, a larger bank is more likely to be an acquirer and smaller one a target. These results are consistent with the regulators' motive for stabilizing the local banking system. Second, acquiring banks improved cost efficiency after the consolidation. M&As also raised the loan interest rate and improved profitability and X-efficiency particularly since the latter half of the 1990s. Nonetheless, the improvement of ROA after the merger was not sufficient to fill in the initial gap of the capital ratio between merging banks and peers, resulting in the deterioration of the capital ratio of consolidated banks relative to peers. M&As did not contribute to sufficiently stabilize the local banking system despite the regulators' motive. Third, the consolidation tended to improve the profitability of merging banks when the difference in profitability and healthiness between acquiring banks and target banks were large, which is consistent with the relative efficiency hypothesis (e.g., Akhavein, Berger, and Humphrey, 1997).

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1. Introduction

Mergers and acquisitions 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 were merged during 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. Yamori (2005) reports that in Japan, the number of large, city banks remained at 13 during the 1980s but decreased almost by half to 7 in

2005. He also reports that 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 2005.

Okada (2005) studied 10 mega-mergers among city banks during 1989-2000. She estimated X-inefficiency and analyzed stock market and credit derivatives market responses and profit measures (ROE and ROA), concluding that no improvement in X-inefficiency was observed but increases in cumulative excess stock returns and decreases in 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. Inoue (2003) and Yamori and Harimaya (2005) estimated the cost efficiency of *shinkin* banks. Using the observations of 33 mergers by *shinkin* banks over the period 1989-98, Inoue (2003) found: 1) the cost efficiency of the acquirer was lower than the average of all *shinkin* banks, 2) it took 6 years to catch up with the cost efficiency, and 3) the improvement of cost efficiency after the merger was achieved by the reduction of personnel costs rather than the reduction of branches. Yamori and Harimaya (2005) used the *shinkin* bank data during 1998-2003 and analyzed the cost efficiency as of 2002. They found that the cost efficiency of those banks that had merged with other banks one year before was significantly lower than those banks that had not merged, while the cost efficiency of those banks that had merged two years and more before was higher but not significantly.

This paper focuses on the consolidation among Japanese *shinkin* banks, which are deposit-taking cooperatives of small business whose objectives, set by the Shinkin Law, are to accept deposits from and make loans to member small firms. Compared with the preceding studies on the consolidation of Japanese banks, this paper comprehensively analyzes the causes and consequences of *shinkin* mergers in the following ways. First, we analyze motives of *shinkin* mergers as well as their consequences. Using a multinominal logit model, we investigate what type of a shinkin bank was more likely to be a target or an acquirer. Second, we investigate the effects of mergers on the profitability and healthiness as well as cost efficiency. If regulatory authorities promote bank consolidation to restore the safety and soundness of the banking system, it is important to examine whether bank consolidation improved bank healthiness or not. Finally, our observations are

comprehensive. We use all the *shinkin* data over the period 1984-2002, the so-called bubble and post-bubble periods. There were 109 M&As by *shinkin* banks from 1984 to 2002, of which 65 M&As data were available.

The rest of the paper is organized as follows. Section 2 discusses the motivation of bank mergers. Section 3 describes our data set. Section 4 presents the estimation results of the motivation of *shinkin* mergers. Section 5 shows the estimation results of the impacts mergers on profitability, market power, cost efficiency, healthiness and portfolio. Section 6 analyzes the link between the ex ante characteristics of acquirers and targets and the consequences of consolidation. Section 7 concludes.

2. Background and History of *Shinkin* Banks

Shinkin banks are deposit-taking cooperative banks that specialize in financing small- and medium-sized enterprises (SMEs) within a region. Just like city banks and regional banks, *shinkin* banks are protected by deposit insurance and subject to the capital adequacy requirements and other banking regulations and supervisions. Unlike city banks or regional banks, however, *shinkin* banks make loans mainly to the member SMEs who capitalize the *shinkin* banks. They can make loans to non-member SMEs, but they have to restrict the share of the loans to non-member SMEs below 20 percentage. The average ratio of loans to non-members is 5.9 % as of March, 2001.[1] On the other hand, they can accept deposits from anyone, while credit cooperatives (*shinyou kumiai*), another type of deposit-taking cooperative banks that specialize in SME financing, can accept deposits only from members. As of March, 2001, the share of deposits from non-members occupies 64.3%. *Shinkin* banks are regional financial institutions in the sense that they can make loans only to SMEs that operate within the same region as the shinkin banks.

Shinkin banks are generally smaller than city banks and tier-1 and tier-2 regional banks and larger than credit cooperatives (*shinyo kumiai*). As of March 2001, the averages of total assets are 434 billion yens for shinkin banks, 1,132 billion yens for tier-2 regional banks, 3,216 billion yens for tier-1 regional banks, and 47,463 billion yens for city banks.[2] *Shinkin* banks occupy 13.8% share of total deposits by private banks, which is smaller than the shares of city banks (36.6%) and tier-1 regional banks (26.6%), but larger than the shares of agricultural cooperatives (10.5%), tier-2 regional banks (8.4%) and credit cooperatives (2.6%). They occupy 14.7% share of total loans to SMEs.

Shinkin banks were first established in 1951 when the *Shinkin* Bank Law

was legislated. Most of them were reorganized from credit cooperatives (*shinyo kumiai*). In 1968, the Shinkin Bank Law was revised to raise the minimum capital, to enlarge the eligibility of members, to admit loans to non-members up to 20% of total loans and to strengthen the authorities of the representative meetings. In the same year, the Merger and Transformation of Financial Institutions Law was legislated to promote M&As among banks. After the legislation, a merger wave occurred. The number of *shinkin* banks decreased from 519 in 1968 to 456 in 1981.

In 1981, the Shinkin Law was again revised. Under the new Law, the regulations towards city banks on the amount of credit to one borrower and the disclosure were applied also to *shinkin* banks, During the 1980s, mergers among *shinkin* banks were rare. The number of shinkin banks was still 454 in 1989.

After the agreement of the Basel Accord in 1988, capital adequacy requirements were introduced in Japan, though the regulations became effective from fiscal year 1992 ending in March 1993 after a five-year transition period. While internationally-operating banks, including all city banks and some regional banks, were required to hold capital more than 8% of risk-weighted assets, domestically-operating banks, including all shinkin banks, were required to hold capital more than 4% of total assets. For *shinkin* banks, capiatal is membership account that is composed mainly of initial contribution by members, legal reserves, and balance carried forward. As of March 2001, the average capital ratio of shinkin banks was 6.03%, while those of tier-1 and tier-2 regional banks that operate domestically are 4.10% and 4.18%, respectively. Among the domestically-operating banks, *shinkin* banks seem to have been relatively well capitalized.

The collapse of land prices and share prices at the early 1990s seriously affected *shinkin* banks as well as city banks and regional banks. Two small credit cooperatives failed in 1994, followed by the failures of two large credit cooperatives and one large tier-2 regional bank in 1995. People were concerned about the soundness of Japanese financial institutions. The government responded to the emergence of the banking crisis by announcing a blanket guarantee to all the deposits and other liabilities of banks, including *shinkin* banks, in 1995. The government also required banks to disclose non-performing loans step by step. *Shinkin* banks lagged behind city banks and regional banks in the release of the amounts of non-performing loans. For example, city banks began to disclose loans to failed borrowers and loans in default for six months in 1993, while shinkin banks began to disclose the former in 1996 and the latter in 1998. The regulatory authorities, who were concerned about depositors' panic triggered by the disclosure

of non-performing loans, imposed looser requirements on disclosure by shinkin banks and credit cooperatives than those on city banks and regional banks. Inadequate disclosure, coupled with no active market for equity, most likely resulted in weak market discipline to *shinkin* banks.

Though the highest decision-making body of *shinkin* banks is the general meeting of the whole members, it is actually replaced by the meeting of the representative members, who are usually elected by the managers and have weak incentives to monitor managers (e.g., Yamori, 2005). To overcome such a weak governance structure of *shinkin* banks, external audits have been required on *shinkin* banks since 1997 with exceptions for small *shinkin* banks. This requirement was strengthened in 2001.

The government enacted the Financial Rehabilitation Law and the Financial Function Strengthening Law in 1998, prompting capital injection to solvent banks and mergers and acquisitions of unhealthy banks. Though the government can recapitalize shinkin banks based on these laws, there has been no government recapitalization of shinkin banks until 2006. On the other hand, a large amount of financial assistance (1,595.6 billion yens) was made by the deposit insurance to those shinkin banks that merge or acquire failed *shinkin* banks from 1999 to 2002. Against the background of the government policy to reorganize shinkin banks, the number of shinkin banks drastically reduced to 301 in 2005 as stated above.

3. Hypotheses on the motives of bank consolidation

This section reviews the hypothesis on the motives of bank consolidation.

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, 1992).

Because most of the consolidation of *shinkin* banks were within the same prefecture (i.e., in-market M&As), market power may be a potential benefit of *shinkin* consolidation. However, some caveats are necessary in applying the value-maximization hypothesis to the *shinkin* M&As for some reasons. First, *shinkin* banks are not corporations but cooperatives of small business. Therefore, *shinkin* banks may not exert its market power to raise loan interest rates even if bank consolidations make the loan market more concentrated. Second, equity of a *shinkin* bank is not traded at a market. Equity-holders (i.e., members) cannot realize capital gains by selling their equity at a *shinkin* bank. This fact may weaken the value-maximizing motive. Third, possibly due to the difficulty of assessing the equity values of *shinkin* banks, the equity of a target has been exchanged at one-for-one price with the equity of the consolidated bank for all the M&As that we could obtain the data on the exchange rates. Given such business practices, banks with a higher economic equity value may not want to acquire or be acquired with banks with a lower economic equity value.

Besides the shareholders' value-maximization motive, bank managers and regulatory authorities have different motives for consolidation. 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.

The government also plays a role in consolidation decisions from the viewpoint of competition policy or prudential regulation policy. The regulatory authorities may prevent bank consolidation to reduce the market power. On the other hand, during periods of financial crises, the government may promote bank consolidation among unhealthy or inefficient banks to restore the stability of the local 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. Because our sample period covers Japan's banking crisis period of the 1990s, it is of particular interest whether bank consolidations were promoted by the government's motive for restoring the financial stability.

4. Data and overview of *shinkin* mergers

The data source of financial statements and mergers and acquisitions 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. Our dataset covers the period 1984-2002. For the details of the variables we use, see Appendix 1.

We use three bank efficiency variables: current income as a proportion of assets (ROA), personal and non-personal expenses including taxes as a proportion of current income (cost ratio), and X-efficiency. While ROA and the cost ratio are simple and direct measures of profit and cost efficiency, respectively, they do not control for the changes in bank portfolios. To control for the mix of bank loans and other assets, we estimate X-efficiency using a standard a translog cost function. See Appendix 2 for the details of the estimation method. It should be noted, however, that estimating X-efficiency has some well-known difficulties. Suppose, for example, that some banks spend less resources to screen and monitor borrowers than others. The former banks may be estimated to be more X-efficient than the latter banks, because they incur a smaller amount of costs after controlling for the amounts of loans. If the former incurs larger loan losses due to poor screening and monitoring and report true amounts of losses, then we could estimate X-efficiency accurately by controlling for loan losses. However, it takes time for banks to recognize loan losses. Banks may not accurately report loan losses (especially under inadequate accounting standards like in Japan).[3] In sum, none of the three efficiency variables is complete. Though we prefer simple measures of ROA and the cost ratio, given the shortcomings of X-efficiency, we also report the results for X-efficiency.

Table 1 shows the movements of the numbers of merges and acquisitions for the sample period. In 1984, there were 456 shinkin banks. Though there were only 2 M&As until 1989, there were 52 M&As in the 1990s and 33 M&As from 2000 to 2002. Due to such a large number of M&As, the number of shinkin banks decreased to 327 in 2002. 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 peers. We define peers as those banks that have not been involved with M&As throughout the sample period. 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.[4]

Figure 1 compares some characteristics of acquirers and targets as compared with peer banks, which were not an acquirer or a target throughout the sample periods. Denoting the year of M&As as period t, we take

differences of bank characteristics variables of acquirers and targets from peers for period $i = t + i$ $(i = -5,-4,,,,4,5)$. We also calculate differences of bank characteristic variables of weighted averages of acquirers and targets from peers for period $i = t + i$ $(i = -5,-4,,,-1)$, where total assets of acquirers and targets are used as weights.[5] Only those banks whose data is available at the merger year and a pre-merger year and 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 for period i 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 period -1 and period 1. For bank characteristics variables, we choose bank efficiency, market power, bank health, and portfolio variables.

First, we examine the bank efficiency variables: ROA, the cost ratio, and X-efficiency. The ROA of acquirers and targets are lower than peers before M&As, though the ROA of acquirers are higher than targets. The ROA did not increase after M&As as compared with the pre-merger acquirer or the pre-merger weighted average. The cost ratio of acquirers is lower than peers one and two years before M&As, while the cost ratio of targets is higher than peers before M&As. The cost ratio decreases one year after the merger compared with the pre-merger weighted average, but turns to increase afterwards. Judging from the ROA and the cost ratio, M&As do not seem to improve the profitability or cost efficiency. The X-efficiency of acquirers and targets are higher than peers before M&As. The X-efficiency once deteriorates just after M&As, and then recovers to the pre-period level three years after M&As.

Second, we analyze market power variables measured by the interest rate of deposits and the interest rate of loans. The interest rate of deposits of acquirers is higher than peers and that of targets is even higher before M&As, possibly reflecting a high risk of insolvency for acquirers and even so for targets. A high deposit interest rate continues after the M&As. The interest rates of loans of acquirers and targets are higher than peers before M&As, and that of consolidated banks is low after M&As. Merged banks do not seem to exert market power in loan markets, though we do not control for the changes in the deposit interest rate and operating costs.

Third, we investigate bank health measured by total capital (i.e., membership accounts) as a proportion of assets (capital ratio), non-performing loans as a proportion of total loans (bad loan ratio), and gross increases in non-performing

loans as a proportion of total loans (new bad loan ratio). The pre-merger capital ratio of acquirers is lower than peers and that of targets is even lower than that of the acquirers. The post-merger capital ratio does not increase from the pre-merger level of the weighted average. The pre-merger bad loan ratio of acquirers is higher than peers and that of targets is even higher than that of the acquirers. It decreases from the pre-merger level of the weighted average after M&A, but remains higher than peers at least for 5 years after M&As. The new bad loan ratio of acquirers is higher than peers and even so for targets before M&As. It initially decreases from the pre-merger weighted average but then increases from 3 years after M&As. M&As do not seem to improve bank health.

Finally, we look at the portfolio variables measured by loans as a proportion of total assets (loan ratio) and the growth rate of total loans (loan growth). Generally, a higher loan ratio implies a riskier portfolio, though we do not have data on the components of loans (e.g., housing loans, small business loans, etc). The loan ratios of acquirers and targets are higher than peers before M&As. The loan ratio of the consolidated bank tends to increase further two years and more after mergers. The loan growth of acquirers is slightly higher than peers but that of targets is much lower than peers before M&As. The loan growth rate of the consolidated banks remains at a low level relative to peers.

5. Empirical Results on the Motives for Consolidation

If bank managers' value maximization motives drive consolidation, relatively profitable and efficient banks would tend to merge with 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 local banking system drive consolidation, relatively unhealthy banks tend to be merged with each other.

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

$$P_j = \frac{\exp(\beta' X_j)}{\sum_{j=1}^{3} \exp(\beta' X_j)} \quad for\ j = 1,2,3 \tag{1}$$

, where p_j is the probability of the bank's choosing the variable j, being an acquirer, a target, or neither. The dependent variable vector X_j consists of

bank profitability, efficiency, healthiness and size as well as other control variables including market concentration and macroeconomic variables. We choose the ROA and the cost ratio for the efficiency variables and the capital 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. Finally, to control for macroeconomic shocks, we add the logarithm of prefectural GDP. All the explanatory variables are lagged by one-year.

Table 3A shows the estimation results. The first column shows the estimated coefficients and the second column shows estimated marginal effects. First two columns show the result for all the sample period. Banks are more likely to be a target if they display a lower ROA, a higher cost ratio, a lower capital ratio, a smaller size, a higher size growth, and operates in a prefecture whose GDP is higher and the Herfindahl index is higher. Banks are more likely to be an acquirer if they display a lower ROA, a higher cost ratio and a larger size. Less profitable and less cost efficient banks are more likely to be an acquirer and a target, though even less profitable and less cost efficient banks are more likely to be a target rather than an acquirer. In addition, a larger bank is more likely to be an acquirer and a smaller one a target.

To take into consideration the occurrence of the banking crisis and the change in regulatory frameworks in 1995, as is described in Section 2, we divide the sample periods into the sub-periods, 1991-95 and 1996-2002. The third to sixth columns show the estimation results for the 1991-95 and 1996-2002 periods. In both sub-periods, banks with a lower capital ratio, a smaller size, and a smaller size growth are more likely to be a target. Banks with a larger size are more likely to be an acquirer for both periods. Though we found a negative correlation of ROA and a positive correlation of the cost ratio with the probability of being an acquirer in the 1996-2002 period, neither of these correlations is statistically significant, possibly due to a relatively smaller number of samples[6].

If the primary motive of *shinkin* banks' consolidation were value maximization, banks that are more profitable and cost efficient than peers would be more likely to acquire inefficient banks to spread their superior expertise and management skills over targets. However, even acquirers are less profitable and less cost efficient than peers. This result is consistent with the hypothesis that regulators promoted mergers among inefficient banks so that

inefficient, but still solvent banks could bailout almost insolvent banks for the aim of stabilizing the local banking system. The fact that a larger, but less profitable bank tends to become an acquirer suggests that the government tried to save such a bank through M&As.

In Table 3B, we used the X-efficiency instead of the ROA and the cost ratio. While a bank with a higher X-efficiency is more likely to be a target, no such a significant correlation between X-efficiency and the probability of being an acquirer is found.

5. Empirical Results on the Consequences of Consolidation

A. Methodology

We investigate the consequences of M&As by comparing the bank characteristics variables of pre-merger and post-merger periods. From the viewpoint of existing shareholders (members) 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 pre-merger weighted averages and post-merger consolidated banks. We compare both.

Specifically, let X^A_{t+i} denote a bank characteristics variable X of an acquirer as of $t+i$, where period t is the year of M&A and $i=-5,-4,,,-1$. Similarly, let X^W_{t+i} denote the weighted average of X for an acquirer and a target with assets being weights and X^P_{t+i} the simple average of peers. Next, we take a difference of X^A_{t+i} (or X^W_{t+i}) and X^P_{t+i} for each i and denote the difference by $\hat{X}^A_{t+i}$. Then we take a simple average over i to construct the average pre-merger relative value, $\hat{X}^A_{pre,t}$ (or $X^W_{pre,t}$). For the post-merger value of X, we take the difference of X between the consolidated bank X^A_{t+i} and the peers X^P_{t+i} for $i=1,2,,,5$, denoted by $\hat{X}^A_{t+i}$. Finally, we test whether the difference between the post merger value of $\hat{X}^A_{t+i}$

and the pre-merger average of $\hat{X}^{A}_{pre,t}$ (or $X^{W}_{pre,t}$) is zero or not for each $i = 1,2,,,5$. We also test whether the simple average of post-merger values of $\hat{X}^{A}_{t+i}$ over i, denoted by $\hat{X}^{A}_{post,t}$ is the same as $\hat{X}^{A}_{pre,t}$ or not. In addition to the t-test for equal means, we also perform Wilcoxon signed-rank test for the null hypothesis that the distribution of $\hat{X}^{A}_{t+i} - \hat{X}^{A}_{pre,t}$ has median zero.

In this section, we select a sample where data on bank characteristics are available for the merger year, one or more pre-merger years, and one or more post-merger years to compare the post-merger performance with the pre-merger performance. This contrasts with data used to construct 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.

B. Baseline results

In this subsection, we choose as peers all the banks that are not involved with M&As throughout the sample period. Table 4 shows the differences of bank characteristics variables between pre-merger acquirers and post-merger consolidated banks. Looking at the comparison with the post-merger average values over up to 5 years, we see that the cost ratio, the capital ratio and the loan growth rate significantly decrease after M&As relative to peer banks. The other variables, including the ROA, the X-efficiency, the deposit interest rate, the loan interest rate, the bad loan and new bad loan ratios, and the loan ratio do not change significantly. Looking at the comparison with the post-merger periods for each year, we see that the ROA increases two years after M&A and the X-efficiency deteriorates one year after M&A (though both are significant only for the z-statistics).

Table 5 shows the differences of bank characteristics variables between pre-merger weighted averages and post-merger consolidated banks. Looking at the comparison with the average of post-merger periods up to 5 years, we see that the cost ratio and the capital ratio rate significantly decrease after M&As, while the other variables do not change significantly. In Appendix 3, we

decompose the cost ratio into three major components: personnel expenditure, non-personnel expenditure, and taxes, and find that the personnel expenditure significantly decreased after M&As, suggesting that M&As promoted a reduction in personnel costs. Looking at the comparison with the post-merger periods for each year, we see that the ROA increases one and two years after M&As (significantly only for the z-statistics), the X-efficiency deteriorates one year after M&As and the loan ratio also increases three to five years after M&As (significantly either for the t-statistics or z-statistics).

In sum, there is some evidence that the cost efficiency of M&As improved both for pre-merger acquirers and weighted average of participating banks. The profitability also tended to improve, though the period of improvement was limited to within two years after the merger. These results are consistent with the value-maximization hypothesis, though we do not control for the changes in bank risk or portfolio. Once we control for these factors by estimating the X-efficiency, we do not find evidence that the operating efficiency improved after M&As. On the other hand, the bank health conditions deteriorated by M&As from pre-merger acquirers or weighted averages. It may be surprising that the increase in ROA did not lead to a higher capital ratio. However, as Figure 1 suggests, the ROA of consolidated banks remained lower than peers after M&As, which continued to deteriorate the capital ratio. The improvement of ROA after the merger was not sufficient to offset the initial gap of the capital ratio between merging banks (i.e., acquirers and targets) and peers. Appendix 4 shows the differences of major components of the capital ratio between pre-merger weighted averages and post-merger consolidated banks, suggesting that the decrease in capital (i.e., membership accounts), in particular the decrease in special reserves, account for most parts of the decrease in the capital ratio. From the viewpoint of borrowers, it is notable that the loan interest rate and the loan growth rate of consolidated banks did not increase as compared with pre-merger weighted averages.

Tables 6 and 7 show the differences of bank characteristics variables between pre-merger weighted averages and post-merger consolidated banks for the two sub-periods: 1991-1995 and 1996-2002. We see that the improvement in the cost ratio and ROA is evident in the latter half of the 1990s (i.e., 1996-2002) but not in the first half of the 1990s (i.e., 1991-95). We also find some evidence that X-efficiency improved in the latter half of the 1990s (significantly three years after M&A), and that it deteriorated in the first half of the 1990s. In

addition, the loan interest rate rose after the merger in the latter half of the 1990s. The improvement in profitability seems to have been brought about both by more efficient operation and stronger market power after M&As in the latter half of the 1990s. On the other hand, the deterioration in the capital ratio is clear throughout the 1990s (i.e., both in the 1991-95 and 1996-2002 periods).

The effects of M&As on bank profitability and cost efficiency were more pronounced in the latter half of the 1990s than in the first half of the 1990s. *Shinkin* banks may have been forced to restructure their business and to improve profitability as the banking system became more unstable due to the non-performing loan problems in the latter half of the 1990s than before. The regulatory authorities may also have urged unhealthy banks to restore healthiness to stabilize the local banking system. In addition, as the loan market became concentrated due to the consolidations that had occurred in the first half of the 1990s, *shinkin* banks may have been easier to raise the loan interest rate in the latter half of the 1990s.

B. Robustness check

In the baseline estimation results above, we use as peers those banks that did not merge or were not merged with other banks throughout the period, which may result in some bias. As has been made clear from the previous section, less profitable and less cost efficient banks are more likely to be an acquirer and a target. If a low ROA and a high cost ratio come from a temporary shock and they tend to return to a normal level in the near future, i.e., if the ROA and the cost ratio are mean reverting, we may find that M&As tend to improve the profitability and cost efficiency relative to the peer banks that were not hit by an unfavorable temporary shock, even though M&A activities do not have any impacts on consolidated banks. To avoid this potential bias, we choose as peers those banks that were likely to be an acquirer or a target but were not actually involved with mergers. We may consider that those banks were likely to be hit by a similar unfavorable shock but did not happen to merge. The probability of being an acquirer or a target is derived from the estimation result in Table 3 for the full sample period. We have 2976 observations constructing newly weighted averaged peers, and we have 5118 observations for constructing previously weighted averaged peers. See the details for constructing new peers in Appendix 5, which also reports the accuracy of the estimated probability of being an acquirer or a target. Though our estimates

underestimates the probability of being a peer (while the proportion of those banks that are classified as "ambiguous" banks are about 49%, the proportion of actual peers is 97%), the relative probability of being an acquirer or a target seems to be reasonably accurate (Among the banks that are classified as "definitely target" banks, those banks that are actually targets and acquirers are 57 and 5, respectively. Similarly, among the banks that are classified as "definitely acquirer" banks, those banks that are actually acquirers and targets are 75 and 11, respectively).

Table 8 shows the results for the weighted average of acquirers and targets. ROA significantly improves one to two years after M&As, as in the baseline results. The improvement of the cost ratio, however, is not significant. The X-efficiency significantly deteriorates one year after M&As. The capital ratio significantly deteriorates, again as in the baseline results. The loan ratio tends to increase, unlike the baseline results, suggesting that the consolidated bank portfolio became riskier.

In sum, the effects of consolidation on the profitability and bank health are robust, while the result for the effect on the cost efficiency is somewhat weaker than the baseline result.

6. Ex ante conditions and the gains from consolidation

A. Hypotheses

The previous sections show that, on average, the cost efficiency and profitability improved but bank health deteriorated for banks engaged in M&As. However, the consequences of bank consolidation may depend on various ex ante characteristics of acquirers and targets as well as market conditions.

The relative performance hypothesis

If a relatively efficient bank acquires a relatively inefficient bank and applies its superior managerial skills to the consolidated bank, then the efficiency gains could be greater. Akhavein, Berger and Humphrey (1997) call this the relative efficiency hypothesis. Using data on U.S. megamergers, they found evidence supporting the relative efficiency hypothesis.

We test whether differences in the ROA and the capital ratios between pre-merger acquirers and targets, denoted by relative performance and relative healthiness, respectively, have an impact on the changes in the post-merger

performances. Both of the relative performance and relative healthiness variables are weighted by the proportion of their combined pre-merger total assets accounted for by the target.

The low efficiency hypothesis

Profit efficiency may tend to improve if either the acquirer or the target or both are poor performers. Akhavein et al., (1997) points out that the merger may "wake up" management and be used as an "excuse" to implement restructuring that would be difficult to implement without the merger. If either or both of merging banks are inefficient prior to the merger, there is large room for improvement Akhavein, Berger and Humphrey (1997) obtain evidences from the U.S. mergers consistent with this hypothesis.

We test whether the ROA and the capital ratio of the acquirer and target have an impact on changes in the post-merger performances.

The relative size hypotheses

The size of the target relative to the size of the acquirer may have an impact on the performance of the merger. Akhavein et al., (1997) asserts that in the case of "mergers of equals," there may be greater cost savings from the elimination of parallel management structures, though their evidence does not support this hypothesis.

Milgrom and Roberts (1992), on the other hand, insist that the costs of mergers, including conflicts of corporate cultures and political battles leading to influence costs, tend to arise when similar-sized organizations are brought together.

To test these conflicting hypotheses, we test whether the size of the target relative to the size of the acquirer has an impact on changes in the post-merger performances.

B. Baseline results

We estimate the following equation using all the pre-merger and post-merger bank data.

$$\Delta Y = \beta_0 + \beta_1 \mathrm{Re}\,lative\,Performance + \beta_2 \mathrm{Re}\,lative\,Health + \beta_3 \mathrm{Re}\,lative\,Size + \beta_4 Herfindahl\ Index + \beta_5 Market\ Share + \beta_6 \mathrm{Pr}\,efectural\,GDP + \beta_7 Size + \varepsilon \quad (2)$$

, where the dependent variable ΔY is the difference of bank characteristics variables between the weighted average of acquirers and targets averaged over up to 5 years before M&As and the consolidated banks averaged over up to 5 years after M&As. The dependent variables are all the pre-merger time average values over up to 5 years. We take differences of all the variables from peers to control fro macroeconomic shocks. We add the pre-merger sum of acquirers and targets: the market share of deposits, and the logarithm of total assets. Furthermore, we add two prefectural indexes: the Herfindahl Index of deposit market within a prefecture and the growth rate of prefecture GDP[7]. When we test the low efficiency hypothesis instead of the relative efficiency hypothesis, we replace the relative performance with the acquirer's and the target's pre-merger performance variables and the relative health with the acquirer's and the target's pre-merger health variables. In this subsection, we use as peers all the banks that are not involved with mergers.

Table 9 shows the estimation results for the full sample period. The relative performance and the relative healthiness have a significantly positive impact on the change in ROA (Panel A) and the change in the capital ratio (Panel F) and a significantly negative impact on the change in the bad loan ratio (Panel G). In Panel C, we measure the relative efficiency by the difference in X-efficiency between acquirers and targets and found that it also has a significantly positive impact on the change in the X-efficiency. These results are consistent with the relative performance hypothesis. In addition, the relative performance and the relative healthiness have a significantly positive impact on the loan growth rate.

Dividing the relative performance into the acquirer's and the target's performance and the relative healthiness into the acquirer's and the target's healthiness, we see that better pre-merger performance and healthiness tend to improve the cost efficiency and healthiness, while the target's worse pre-merger performance and healthiness tend to improve the cost efficiency and healthiness. These results support the relative performance hypothesis. The results for the target's pre-merger performance and healthiness are also consistent with the low efficiency hypothesis. Poorer pre-merger target performance and healthiness result in a higher loan growth rate, suggesting that the loan growth rate tends to recover from a low level at the target.

The relative size has a significantly negative impact on the capital ratio (Panel F), suggesting that consolidating banks tend to increase the capital ratio

more as the size of the target is smaller relative to the acquirer, which is consistent with the conflict of corporate culture hypothesis (Milgrom and Roberts, 1992).

Bank size has a significantly negative impact on the deposit interest rate (Panel D), suggesting that depositors feel safer if larger banks merge.

Dividing the sample period into the two sub-periods, 1991-1995 and 1996-2002, we see that the full sample estimation results largely resemble the results for the latter half of the 1990s, though the results are not shown to save space. (The results are available from the authors upon request.)

C. Robustness check

To avoid the sample selection bias mentioned in the previous section, we use peers defined in Section 5. B. The results (Table 10) are virtually the same as the baseline results. Especially, the relative performance and the relative healthiness have a significantly positive impact on the change in ROA and the capital ratio and a significantly negative impact on the change in the bad loan ratio. The relative efficiency and the acquirer's X-efficiency have a positive impact on the change in the X-efficiency.

7. Conclusion

The recent 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. We investigate the motives and consequences of the consolidation of cooperative banks (*Shinkin*) in Japan during the period 1984-2002. Our major findings are as follows.

First, less profitable and less cost efficient banks are more likely to be an acquirer and a target, though even less profitable and less cost efficient banks are more likely to be a target rather than an acquirer. In addition, a larger bank is more likely to be an acquirer and smaller one a target. These results are consistent with the regulators' motive for stabilizing the local banking system. Large, but unhealthy and inefficient banks respond to the regulators request, implicit or explicit, to merge a small and inefficient banks in order to survive and benefit from a subsidized deposit rate.

Second, acquiring banks improved cost efficiency after consolidation. M&As also raised the loan interest rate and improved profitability particularly in the

latter half of the 1990s. While M&As deteriorated X-efficiency in the first half of the 1990s, they improved X-efficiency in the last half of the 1990s. The improvement in profitability seems to have been brought about both by more efficient operation and stronger market power since the latter half of the 1990s. The latter result may be problematic from the viewpoint of competition policy. Nonetheless, the improvement of ROA after the merger was not sufficient to offset the initial gap of the capital ratio between merging banks (i.e., acquirers and targets) and peers, resulting in the deterioration of the capital ratio of consolidated banks relative to peers. M&As did not appear to contribute sufficiently to stabilizing the local banking system.

Finally, consolidation tended to improve the profitability of merging banks when the difference in profitability and healthiness between acquiring banks and target banks were large, which is consistent with the relative efficiency hypothesis (e.g., Akhavein, Berger, and Humphrey, 1997).

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[1] The main data source of this subsection is Zenkoku Shinyo Kinko Kyokai (2002).
[2] The data source for asset size is the *Nikkei Financial Quest*.
[3] We reestimate X-efficiency in a way that incorporates loan quality measured by loan losses and bank capital (Mester, ****), and obtained a similar result for the determinants of the probability of being a target or an acquirer (Table 3B).
[4] 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 implemented an extremely-low-interest-rate policy.
[5] If three and more shinkin banks merged, the series of target are a weighted sum of the targets and the series of the weighted average are a weighted sum of the targets and acquirers. In both series, we use total assets as weights.
[6] Using the 1991-2002 sample period, we found a positive correlation between the probability of being an acquirer and the cost ratio that is statistically significant, while we also found a negative correlation between the probability of being an acquirer and ROA is statistically insignificant.
[7] One may concern about a high correlation between the market share and the Herfindahl Index. We dropped either of these two variables and obtained the same sign and a similar statistical significance of the coefficient on the remaining variable. We also checked the robustness of our results by redefining the market share and the Herfindahl Index including the deposits of the regional banks that operate in the same prefecture. We again obtained a similar result.

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Table 1. Number of *Shinkin* Banks

Year	All banks	Merger	Transfer of business	Dissoluton	Switch over of business
1984	456	0	0	0	0
1985	456	0	0	0	0
1986	455	1	0	0	0
1987	455	0	0	0	0
1988	455	0	0	0	0
1989	454	1	0	0	0
1990	451	3	0	0	0
1991	440	7	0	0	2
1992	435	4	0	0	1
1993	428	5	0	1	0
1994	421	8	0	0	0
1995	416	4	0	0	0
1996	410	5	1	0	0
1997	401	8	0	0	0
1998	396	3	0	0	0
1999	386	5	1	0	0
2000	371	7	8	0	0
2001	349	11	6	0	0
2002	326	15	6	0	0
Total	7,961	87	22	1	3

Table 2. Summary Statistics

	All	Peer	Target	Acquirer
	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.	Mean Std. Dev.
ROA (%)	0.41	0.45	-1.78	0.24
	(0.90)	(0.50)	(5.97)	(0.50)
Cost ratio (%)	39.94	39.65	52.31	47.10
	(14.24)	(14.09)	(16.83)	(14.38)
X-efficiency	0.44	0.44	0.46	0.45
	(0.05)	(0.05)	(0.08)	(0.06)
Interest rate of deposit (%	2.27	2.30	1.20	1.34
	(1.56)	(1.55)	(1.47)	(1.39)
Interest rate of loan (%)	5.24	5.27	4.00	4.16
	(1.72)	(1.72)	(1.56)	(1.48)
Capital ratio (%)	5.28	5.33	1.89	5.03
	(9.55)	(9.64)	(7.91)	(1.70)
Bad loan ratio (%)	6.00	5.78	12.13	7.72
	(4.42)	(4.15)	(7.45)	(5.23)
New bad loan ratio (%)	0.20	0.19	0.42	0.26
	(0.40)	(0.36)	(1.01)	(0.35)
Loan ratio (%)	58.14	58.08	60.06	60.07
	(9.59)	(9.53)	(14.11)	(7.86)
Loan growth (%)	4.30	4.43	-3.36	3.43
	(8.67)	(8.64)	(6.11)	(9.63)
ln(Asset)	18.68	18.68	18.26	19.27
	(1.00)	(0.99)	(0.96)	(0.98)
Asset growth (%)	3.20	3.28	-3.54	4.81
	(25.16)	(25.45)	(11.54)	(11.53)
Market share (%)	11.27	11.32	5.23	13.67
	(12.10)	(12.11)	(6.22)	(13.85)
Herfindahl index	0.16	0.16	0.17	0.16
	(0.11)	(0.11)	(0.13)	(0.11)
ln(Prefectual GDP)	16.20	16.19	16.63	16.48
	(1.04)	(1.04)	(1.11)	(1.07)
Number of observations	7,961	7,723	119	119

Table 3A. Multinominal logistic regression

	All		1991-1995		1996-2002	
	Coef.	Merg. Eff	Coef.	Merg. Eff	Coef.	Merg. Eff
Target						
ROA	-0.678 a	-0.005 a	-0.247	-0.002	-0.119	-0.001
	(0.100)	(0.001)	(0.158)	(0.001)	(0.144)	(0.001)
Cost ratio	0.033 a	0.000 a	-0.039	0.000	0.009	0.000
	(0.007)	(0.000)	(0.028)	(0.000)	(0.015)	(0.000)
Capital ratio	-0.009 a	0.000 b	-0.377 a	-0.003 a	-0.442 a	-0.003 a
	(0.004)	(0.000)	(0.136)	(0.001)	(0.092)	(0.001)
Size	-0.713 a	-0.005 a	-0.914 a	-0.006 a	-1.034 a	-0.008 a
	(0.108)	(0.001)	(0.249)	(0.002)	(0.168)	(0.002)
Size growth	-0.011 c	0.000 c	-0.090 b	-0.001 c	-0.149 a	-0.001 a
	(0.006)	(0.000)	(0.045)	(0.000)	(0.037)	(0.000)
Prefectural GDP	0.729 a	0.005 a	0.288	0.002	0.696 a	0.005 a
	(0.131)	(0.001)	(0.278)	(0.002)	(0.192)	(0.002)
Herfindahl index	3.168 a	0.023 a	0.621	0.004	1.965	0.015
	(1.010)	(0.007)	(2.500)	(0.017)	(1.329)	(0.011)
Cons	-4.870 c		11.133 b		5.306	
	(2.656)		(5.651)		(4.044)	
Acquirer						
ROA	-0.308 b	-0.004 c	0.151	0.002	-0.281	-0.006
	(0.154)	(0.002)	(0.816)	(0.009)	(0.194)	(0.005)
Cost ratio	0.025 a	0.000 a	0.018	0.000	0.005	0.000
	(0.007)	(0.000)	(0.028)	(0.000)	(0.015)	(0.000)
Capital ratio	-0.006	0.000	-0.273	-0.003	-0.022	0.000
	(0.011)	(0.000)	(0.174)	(0.002)	(0.068)	(0.002)
Size	0.545 a	0.006 a	0.383	0.004 c	0.601 a	0.014 a
	(0.112)	(0.001)	(0.234)	(0.002)	(0.162)	(0.003)
Size growth	0.001	0.000	-0.019	0.000	0.003	0.000
	(0.003)	(0.000)	(0.038)	(0.000)	(0.009)	(0.000)
Prefectural GDP	-0.002	0.000	-0.373	-0.004	0.046	0.001
	(0.144)	(0.002)	(0.320)	(0.003)	(0.202)	(0.005)
Herfindahl index	0.047	0.000	-2.092	-0.023	0.451	0.010
	(1.140)	(0.013)	(2.803)	(0.031)	(1.356)	(0.031)
Cons	-15.411 a		-4.363		-16.128 a	
	(2.297)		(5.157)		(3.774)	
Obs	7761		2127		2599	
Pseudo R-sq	0.129		0.070		0.198	
Log likelihood	-1025.9		-268.8		-532.2	

Notes:
(1) The base outcome is "neither of acquirer or target".
(2) Standard errors are in parentheses.
(3) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 3B. Multinominal Logistic Regression Results

	1984-2002	1991-1995	1996-2002
	Coef.	Coef.	Coef.
Target			
X-efficiency	4.448 a	6.611 b	4.520 b
	(1.649)	(3.148)	(1.889)
Capital ratio	-0.003	-0.398 a	-0.530 a
	(0.002)	(0.136)	(0.091)
Size	-0.630 a	-0.826 a	-1.114 a
	(0.097)	(0.245)	(0.165)
Size growth	-0.015 a	-0.065	-0.147 a
	(0.004)	(0.041)	(0.034)
Prefectural GDP	1.009 a	0.260	0.762 a
	(0.125)	(0.272)	(0.193)
Herfindahl index	5.164 a	0.701	1.866
	(0.908)	(2.542)	(1.327)
Cons	-11.957 a	5.696	4.610
	(2.627)	(6.365)	(3.976)
Acquirer			
X-efficiency	0.578	-2.936	0.476
	(1.961)	(6.289)	(1.958)
Capital ratio	-0.003	-0.247	-0.064
	(0.008)	(0.152)	(0.068)
Size	0.535 a	0.346	0.572 a
	(0.109)	(0.229)	(0.156)
Size growth	0.000	-0.023	0.003
	(0.003)	(0.039)	(0.009)
Prefectural GDP	0.109	-0.349	0.034
	(0.144)	(0.316)	(0.205)
Herfindahl index	0.956	-2.006	0.393
	(1.118)	(2.776)	(1.370)
Cons	-16.486 a	-2.257	-15.059 a
	(2.411)	(5.936)	(3.456)
Obs	7761	2126	2599
Pseudo R-sq	0.060	0.072	0.202
Log likelihood	-1107.5	-268.3	-529.1

Notes:
(1) The base outcome is "neither of acquirer or target".
(2) Standard errors are in parentheses.
(3) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 4. Changes in Bank Characteristics after M&As: Acquirers

	t=1	t=2	t=3	t=4	t=5	Average
ROA						
Pre-merger	-0.09	-0.13	-0.10	-0.08	-0.09	-0.09
Post-merger (t years after	-0.10	-0.29	-0.16	-0.21	-0.29	-0.21
Diff	-0.01	-0.16	-0.06	-0.13	-0.20	-0.12
t-Statistics	-0.15	-0.60	-0.69	-1.14	-0.80	-1.03
z-Statistics	0.64	2.09 b	0.07	-0.43	0.55	0.47
Cost ratio						
Pre-merger	-0.27	0.13	0.48	0.66	0.75	-0.27
Post-merger (t years after	-1.74	-0.67	-1.07	-0.15	-0.59	-1.89
Diff	-1.47	-0.81	-1.55	-0.81	-1.35	-1.61
t-Statistics	-2.17 b	-0.98	-1.70 c	-0.97	-1.13	-2.29 b
z-Statistics	-1.52	-1.20	-2.05 b	-0.65	-0.75	-2.18 b
X-efficiency						
Pre-merger	0.00	0.00	0.00	0.00	0.00	0.00
Post-merger (t years after	-0.01	0.00	0.01	0.00	0.00	-0.01
Diff	-0.01	0.00	0.01	0.00	0.01	0.00
t-Statistics	-1.43	-0.33	0.79	0.21	0.44	-0.58
z-Statistics	-1.77 c	-0.64	0.14	-0.26	-0.48	-0.97
Interest rates of deposits						
Pre-merger	0.00	0.00	-0.01	-0.02	-0.02	0.00
Post-merger (t years after	0.03	0.03	0.03	0.03	0.03	0.02
Diff	0.03	0.03	0.04	0.05	0.05	0.02
t-Statistics	1.51	1.30	1.53	1.48	1.28	1.22
z-Statistics	1.27	1.06	1.51	1.37	1.08	1.05
Interest rates of loans						
Pre-merger	-0.02	-0.02	-0.04	-0.02	-0.01	-0.02
Post-merger (t years after	0.00	-0.02	-0.01	-0.01	0.00	0.01
Diff	0.02	0.00	0.02	0.01	0.00	0.02
t-Statistics	0.73	0.00	0.55	0.24	0.07	0.84
z-Statistics	0.94	-0.03	0.73	0.19	0.40	0.74
Capital ratio						
Pre-merger	-0.71	-0.70	-0.49	-0.44	-0.40	-0.71
Post-merger (t years after	-1.38	-1.60	-1.46	-1.44	-1.70	-1.60
Diff	-0.68	-0.90	-0.97	-1.00	-1.30	-0.89
t-Statistics	-5.68 a	-2.87 a	-4.65 a	-3.84 a	-3.32 a	-5.13 a
z-Statistics	-4.86 a	-3.93 a	-3.92 a	-3.22 a	-3.10 a	-5.01 a
Bad loan ratio						
Pre-merger	0.76	0.81	0.33	-0.03	-0.03	0.76
Post-merger (t years after	1.70	1.49	1.43	1.50	0.97	1.32
Diff	0.94	0.67	1.11	1.53	0.99	0.56
t-Statistics	1.48	0.83	1.31	2.66	1.42	0.97
z-Statistics	1.27	0.78	1.27	1.60	1.07	0.85
New bad loan ratio						
Pre-merger	0.30	-0.50	0.67			0.30
Post-merger (t years after	-0.12	-0.64	-1.03			-0.48
Diff	-0.42	-0.14	-1.70			-0.78
t-Statistics	-0.47	-0.12	-0.98			-0.93
z-Statistics	-0.52	-0.71	-1.07			-0.98
Loan ratio						
Pre-merger	3.79	3.89	4.00	3.18	2.75	3.79
Post-merger (t years after	3.32	3.81	4.17	3.31	3.45	3.71
Diff	-0.47	-0.08	0.17	0.13	0.70	-0.08
t-Statistics	-1.01	-0.15	0.26	0.17	0.74	-0.18
z-Statistics	-1.05	-0.53	0.08	0.28	0.73	-0.19
Loan growth						
Pre-merger	0.23	0.53	-0.14	0.21	0.23	0.23
Post-merger (t years after	-0.84	-0.62	-1.94	-1.84	-0.24	-0.73
Diff	-1.08	-1.15	-1.80	-2.06	-0.47	-0.96
t-Statistics	-1.38	-1.55	-3.22 a	-2.71 b	-0.27	-1.46
z-Statistics	-1.33	-1.27	-2.89 a	-2.64 a	-1.86 c	-1.66 c

Notes:
(1) The numbers represent differences from the average of peers.
(2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 5. Changes in Bank Characteristics after M&As: Weighted Average

	t=1	t=2	t=3	t=4	t=5	Average
ROA						
Pre-merger	-0.23	-0.26	-0.14	-0.12	-0.13	-0.23
Post-merger (t years after	-0.10	-0.29	-0.16	-0.21	-0.29	-0.22
Diff	0.13	-0.03	-0.02	-0.09	-0.16	0.02
t-Statistics	1.60	-0.12	-0.21	-0.80	-0.64	0.12
z-Statistics	1.97 b	2.47 b	0.29	0.04	1.04	1.58
Cost ratio						
Pre-merger	0.09	0.41	0.68	0.58	0.66	0.09
Post-merger (t years after	-1.53	-0.39	-1.07	-0.15	-0.59	-1.69
Diff	-1.62	-0.80	-1.75	-0.74	-1.25	-1.78
t-Statistics	-2.16 b	-0.87	-1.71 c	-0.88	-1.02	-2.30 b
z-Statistics	-1.28	-0.73	-1.63	-0.47	-0.63	-1.91 c
X-efficiency						
Pre-merger	0.00	0.00	0.00	0.00	0.00	0.00
Post-merger (t years after	-0.01	0.00	0.01	0.00	0.00	0.00
Diff	-0.01	0.00	0.01	0.00	0.00	-0.01
t-Statistics	-1.71 c	-0.47	0.56	-0.13	0.15	-0.83
z-Statistics	-1.80 c	-0.55	0.11	-0.54	-0.75	-1.13
Interest rates of deposits						
Pre-merger	0.01	0.01	0.00	0.00	0.00	0.01
Post-merger (t years after	0.03	0.03	0.03	0.03	0.03	0.02
Diff	0.02	0.02	0.03	0.03	0.03	0.02
t-Statistics	1.27	0.98	1.16	1.00	0.79	0.96
z-Statistics	0.57	0.59	1.16	1.03	0.55	0.70
Interest rates of loans						
Pre-merger	-0.02	-0.04	-0.07	-0.05	-0.05	-0.02
Post-merger (t years after	0.01	-0.01	-0.01	-0.01	0.00	0.02
Diff	0.04	0.03	0.05	0.05	0.04	0.04
t-Statistics	1.13	0.81	1.06	0.83	0.72	1.32
z-Statistics	1.28	0.64	1.23	0.47	0.67	1.20
Capital ratio						
Pre-merger	-0.98	-0.92	-0.63	-0.55	-0.52	-0.98
Post-merger (t years after	-1.37	-1.59	-1.46	-1.44	-1.70	-1.59
Diff	-0.39	-0.68	-0.83	-0.89	-1.18	-0.61
t-Statistics	-2.83 a	-1.97 c	-4.19 a	-3.58 a	-3.12 a	-3.04 a
z-Statistics	-3.28 a	-2.75 a	-3.41 a	-2.84 a	-2.66 a	-3.29 a
Bad loan ratio						
Pre-merger	1.89	2.02	0.82	0.47	0.47	1.89
Post-merger (t years after	1.59	1.35	0.95	1.50	0.97	1.23
Diff	-0.30	-0.67	0.13	1.03	0.50	-0.65
t-Statistics	-0.42	-0.63	0.17	1.75	0.49	-0.98
z-Statistics	-0.18	-0.20	0.28	1.60	0.59	-0.76
New bad loan ratio						
Pre-merger	0.77	-0.66	0.12			0.77
Post-merger (t years after	-0.11	-0.73	-0.38			-0.51
Diff	-0.88	-0.07	-0.49			-1.27
t-Statistics	-0.74	-0.05	-0.49			-1.17
z-Statistics	-0.77	-0.51	-0.45			-1.25
Loan ratio						
Pre-merger	3.15	2.97	2.97	2.07	1.58	3.15
Post-merger (t years after	3.20	3.65	4.17	3.31	3.45	3.59
Diff	0.05	0.67	1.20	1.24	1.87	0.44
t-Statistics	0.11	1.12	1.83 c	1.69	1.90 c	0.84
z-Statistics	-0.03	0.63	1.49	1.72 c	1.68 c	0.70
Loan growth						
Pre-merger	-0.96	-0.86	-1.06	-0.71	-0.74	-0.96
Post-merger (t years after	-0.86	-0.69	-1.94	-1.84	-0.24	-0.76
Diff	0.10	0.17	-0.87	-1.14	0.50	0.20
t-Statistics	0.15	0.26	-1.56	-1.49	0.27	0.35
z-Statistics	0.09	0.36	-1.40	-1.61	-0.98	0.14

Notes:
(1) The numbers represent differences from the average of peers.
(2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 6. Changes in Bank Characteristics after M&As: Weighted Average, 1991-1995

	t=1	t=2	t=3	t=4	t=5	Average
ROA						
Pre-merger	-0.10	-0.10	-0.10	-0.10	-0.11	-0.10
Post-merger (t years after	-0.15	-0.14	-0.06	-0.19	-0.39	-0.19
Diff	-0.05	-0.04	0.04	-0.09	-0.28	-0.09
t-Statistics	-1.10	-0.58	0.46	-0.57	-0.78	-0.70
z-Statistics	-1.22	-0.67	-0.05	0.24	0.50	-0.18
Cost ratio						
Pre-merger	0.93	0.93	0.93	0.93	0.83	0.93
Post-merger (t years after	0.83	0.72	1.32	0.91	0.65	0.88
Diff	-0.10	-0.21	0.40	-0.01	-0.18	-0.05
t-Statistics	-0.09	-0.16	0.33	-0.01	-0.13	-0.04
z-Statistics	1.22	0.37	0.18	0.44	0.23	0.41
X-efficiency						
Pre-merger	0.00	0.00	0.00	0.00	0.00	0.01
Post-merger (t years after	-0.02	-0.02	-0.02	-0.01	-0.02	0.00
Diff	-0.02	-0.02	-0.02	-0.02	-0.02	0.00
t-Statistics	-4.24 a	-2.43 b	-2.34 b	-1.70	-1.81 c	-2.57 b
z-Statistics	-3.20 a	-2.16 b	-2.00 b	-1.61	-1.69 c	-2.32 b
Interest rates of deposits						
Pre-merger	-0.01	-0.01	-0.01	-0.01	0.00	-0.01
Post-merger (t years after	-0.01	0.00	0.00	0.01	0.00	0.00
Diff	0.00	0.00	0.01	0.01	0.00	0.01
t-Statistics	-0.02	0.11	0.18	0.30	-0.08	0.22
z-Statistics	-0.37	-0.18	0.05	0.18	-0.02	0.08
Interest rates of loans						
Pre-merger	0.00	0.00	0.00	0.00	0.00	0.00
Post-merger (t years after	-0.02	-0.04	-0.02	-0.01	0.01	-0.01
Diff	-0.02	-0.04	-0.02	-0.01	0.01	-0.01
t-Statistics	-0.33	-0.58	-0.31	-0.11	0.14	-0.25
z-Statistics	-0.21	-0.63	-0.11	-0.44	0.19	-0.31
Capital ratio						
Pre-merger	-0.40	-0.40	-0.40	-0.40	-0.39	-0.40
Post-merger (t years after	-0.76	-0.88	-1.23	-1.31	-1.71	-1.17
Diff	-0.36	-0.48	-0.83	-0.91	-1.32	-0.77
t-Statistics	-2.56 b	-2.56 b	-2.76 b	-2.92 a	-2.55 b	-3.21 a
z-Statistics	-2.13 b	-2.16 b	-2.06 b	-2.13 b	-1.89 c	-2.45 b
Bad loan ratio						
Pre-merger						
Post-merger (t years after)						
Diff						
t-Statistics						
z-Statistics						
New bad loan ratio						
Pre-merger						
Post-merger (t years after)						
Diff						
t-Statistics						
z-Statistics						
Loan ratio						
Pre-merger	0.83	0.83	0.83	0.83	0.48	0.83
Post-merger (t years after	1.53	1.85	2.09	1.44	1.68	1.76
Diff	0.70	1.02	1.26	0.61	1.19	0.93
t-Statistics	0.81	1.19	1.39	0.70	1.04	1.12
z-Statistics	0.80	0.96	1.06	0.63	0.85	0.86
Loan growth						
Pre-merger	-0.46	-0.46	-0.46	-0.46	-0.58	-0.46
Post-merger (t years after	-0.07	-0.59	-2.46	-1.70	-2.15	-1.39
Diff	0.39	-0.13	-2.00	-1.24	-1.57	-0.93
t-Statistics	0.34	-0.13	-2.51 b	-1.34	-1.73 c	-1.28
z-Statistics	0.11	-0.34	-2.32 b	-1.22	-1.55	-1.02

Notes:
(1) The numbers represent differences from the average of peers.
(2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 7. Changes in Bank Characteristics after M&As: Weighted Average, 1996-2002

	t=1	t=2	t=3	t=4	t=5	Average
ROA						
Pre-merger	-0.32	-0.41	-0.21	-0.16	-0.19	-0.32
Post-merger (t years after	-0.07	-0.45	-0.33	-0.31	-0.02	-0.24
Diff	0.25	-0.04	-0.12	-0.15	0.17	0.07
t-Statistics	1.90 c	-0.07	-0.53	-0.72	1.57	0.35
z-Statistics	2.71 a	3.24 a	-0.09	-0.51	1.15	1.76 c
Cost ratio						
Pre-merger	-0.44	-0.08	0.26	-0.61	-0.01	-0.44
Post-merger (t years after	-2.90	-1.32	-5.18	-4.16	-5.75	-3.29
Diff	-2.46	-1.25	-5.44	-3.56	-5.74	-2.85
t-Statistics	-2.33 b	-0.86	-3.04 a	-2.41 c	-1.65	-2.60 b
z-Statistics	-1.94 c	-0.90	-2.61 a	-2.03 b	-1.36	-2.32 b
X-efficiency						
Pre-merger	0.00	0.00	0.00	-0.01	-0.01	0.00
Post-merger (t years after	0.00	0.01	0.05	0.05	0.08	0.00
Diff	-0.01	0.01	0.05	0.06	0.08	0.00
t-Statistics	-0.60	0.52	2.07 c	1.44	1.66	0.09
z-Statistics	-0.64	0.78	1.73 c	1.52	1.57	-0.04
Interest rates of deposits						
Pre-merger	0.02	0.03	0.02	0.03	0.03	0.02
Post-merger (t years after	0.05	0.06	0.09	0.12	0.07	0.03
Diff	0.03	0.03	0.06	0.09	0.04	0.01
t-Statistics	1.45	1.21	2.36 b	2.95 b	0.92	0.91
z-Statistics	1.10	0.93	2.17 b	1.86 c	0.73	0.73
Interest rates of loans						
Pre-merger	-0.03	-0.06	-0.14	-0.15	-0.13	-0.03
Post-merger (t years after	0.05	0.06	0.09	0.11	0.08	0.06
Diff	0.07	0.12	0.24	0.26	0.20	0.08
t-Statistics	1.90 c	2.23 b	3.10 a	1.96 c	1.15	2.30 b
z-Statistics	1.86 c	2.30 b	2.92 a	2.03 b	0.94	2.40 b
Capital ratio						
Pre-merger	-1.38	-1.49	-1.14	-1.29	-1.27	-1.38
Post-merger (t years after	-1.78	-2.36	-2.07	-2.28	-2.27	-1.91
Diff	-0.39	-0.87	-0.92	-0.99	-1.00	-0.52
t-Statistics	-1.85 c	-1.29	-3.22 a	-1.69	-1.73	-1.75 c
z-Statistics	-2.18 b	-1.57	-2.61 a	-1.86 c	-1.78 c	-2.05 b
Bad loan ratio						
Pre-merger	1.89	2.02	0.82	0.47	0.47	1.89
Post-merger (t years after	1.59	1.35	0.95	1.50	0.97	1.23
Diff	-0.30	-0.67	0.13	1.03	0.50	-0.65
t-Statistics	-0.42	-0.63	0.17	1.75	0.49	-0.98
z-Statistics	-0.18	-0.20	0.28	1.60	0.54	-0.76
New bad loan ratio						
Pre-merger	0.77	-0.66	0.12			0.77
Post-merger (t years after	-0.11	-0.73	-0.38			-0.51
Diff	-0.88	-0.07	-0.49			-1.27
t-Statistics	-0.74	-0.05	-0.49			-1.17
z-Statistics	-0.77	-0.51	-0.45			-1.25
Loan ratio						
Pre-merger	4.40	4.75	6.15	5.18	4.28	4.40
Post-merger (t years after	4.18	5.34	7.44	9.27	10.17	4.66
Diff	-0.22	0.58	1.29	4.10	5.89	0.26
t-Statistics	-0.32	0.62	1.10	2.94 b	3.00 b	0.36
z-Statistics	-0.47	0.28	0.97	2.03 b	1.99 b	0.35
Loan growth						
Pre-merger	-1.44	-1.49	-2.60	-2.52	-2.53	-1.44
Post-merger (t years after	-1.04	-0.47	-1.41	-2.02	6.84	-0.28
Diff	0.41	1.02	1.18	0.50	9.36	1.16
t-Statistics	0.49	1.15	1.79 c	0.31	1.15	1.49
z-Statistics	0.22	1.38	1.54	0.00	1.15	1.47

Notes:
(1) The numbers represent differences from the average of peers.
(2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 8. Changes in Bank Characteristics after M&As: Weighted Average, Robustness Check

	t=1	t=2	t=3	t=4	t=5	Average
ROA						
Pre-merger	-0.24	-0.27	-0.15	-0.13	-0.14	-0.24
Post-merger (t years after	-0.15	-0.32	-0.18	-0.24	-0.33	-0.27
Diff	0.10	-0.06	-0.03	-0.11	-0.19	-0.02
t-Statistics	1.25	-0.20	-0.34	-0.92	-0.76	-0.17
z-Statistics	1.69 c	2.37 b	0.28	-0.22	0.73	1.10
Cost ratio						
Pre-merger	0.93	1.10	1.28	1.17	1.25	0.93
Post-merger (t years after	0.03	1.05	0.30	1.26	1.11	0.16
Diff	-0.90	-0.05	-0.99	0.09	-0.13	-0.77
t-Statistics	-1.23	-0.05	-1.02	0.11	-0.11	-1.02
z-Statistics	-0.35	0.23	-0.91	0.69	0.22	-0.29
X-efficiency						
Pre-merger	0.00	0.00	0.00	0.00	0.00	0.00
Post-merger (t years after	-0.01	0.00	0.01	0.00	0.00	-0.01
Diff	-0.01	0.00	0.01	0.00	0.00	-0.01
t-Statistics	-1.75 c	-0.54	0.52	-0.13	0.10	-0.92
z-Statistics	-1.77 c	-0.72	0.03	-0.56	-0.71	-1.19
Interest rates of deposits						
Pre-merger	0.01	0.01	0.01	0.01	0.01	0.01
Post-merger (t years after	0.03	0.03	0.02	0.02	0.02	0.02
Diff	0.02	0.02	0.02	0.02	0.01	0.01
t-Statistics	1.13	0.69	0.69	0.56	0.40	0.67
z-Statistics	0.42	0.38	0.75	0.75	0.24	0.53
Interest rates of loans						
Pre-merger	0.06	0.04	0.02	0.03	0.04	0.06
Post-merger (t years after	0.10	0.08	0.07	0.07	0.07	0.10
Diff	0.04	0.03	0.05	0.04	0.04	0.04
t-Statistics	1.26	0.86	1.01	0.80	0.64	1.35
z-Statistics	1.31	0.56	1.10	0.37	0.55	1.12
Capital ratio						
Pre-merger	-1.00	-0.95	-0.68	-0.61	-0.59	-1.00
Post-merger (t years after	-1.46	-1.65	-1.49	-1.46	-1.76	-1.69
Diff	-0.45	-0.70	-0.81	-0.85	-1.17	-0.69
t-Statistics	-3.44 a	-2.05 b	-4.04 a	-3.38 a	-3.10 a	-3.54 a
z-Statistics	-3.76 a	-2.90 a	-3.27 a	-2.54 b	-2.52 b	-3.85 a
Bad loan ratio						
Pre-merger	2.00	2.13	0.98	0.64	0.64	2.00
Post-merger (t years after	1.86	1.59	1.19	1.84	1.32	1.53
Diff	-0.14	-0.54	0.21	1.20	0.68	-0.47
t-Statistics	-0.19	-0.51	0.28	2.04	0.68	-0.71
z-Statistics	0.06	-0.20	0.28	1.60	1.07	-0.45
New bad loan ratio						
Pre-merger	0.74	-0.67	0.10			0.74
Post-merger (t years after	0.02	-0.53	-0.32			-0.38
Diff	-0.71	0.13	-0.43			-1.11
t-Statistics	-0.61	0.08	-0.43			-1.02
z-Statistics	-0.64	-0.34	-0.45			-1.17
Loan ratio						
Pre-merger	2.34	2.01	1.85	0.78	0.29	2.34
Post-merger (t years after	3.05	3.46	3.94	3.09	3.26	3.57
Diff	0.71	1.45	2.10	2.31	2.97	1.23
t-Statistics	1.37	2.37 b	3.19 a	3.17 a	2.98 a	2.33 b
z-Statistics	1.29	1.79 c	2.47 b	2.66 a	2.54 b	2.17 b
Loan growth						
Pre-merger	-0.92	-0.89	-1.17	-0.89	-0.93	-0.92
Post-merger (t years after	-0.70	-0.50	-1.70	-1.67	-0.04	-0.59
Diff	0.22	0.39	-0.54	-0.78	0.88	0.33
t-Statistics	0.32	0.61	-0.98	-1.02	0.49	0.60
z-Statistics	0.31	0.58	-0.87	-1.18	-0.57	0.45

Notes:
(1) The numbers represent differences from the average of peers.
(2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 9. OLS Regression Results for the Change in Bank Characteristics after M&As

Panel A. Change in ROA

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	1.132	1.299 b	1.369 a					
	(3.285)	(0.505)	(0.304)					
Relative health	0.746	0.144		0.645 a				
	(0.570)	(0.269)		(0.174)				
Relative size	-0.890	-1.189			0.450			
	(1.112)	(1.006)			(1.088)			
Acquirer's performance	-1.212					-0.906	-0.622	
	(1.378)					(0.846)	(0.659)	
Target's performance	-0.356					-1.518 a	-1.346 a	
	(3.160)					(0.549)	(0.296)	
Acquirer's health	-0.121					0.115		-0.024
	(0.276)					(0.189)		(0.160)
Target's health	0.625					0.083		-0.522 a
	(0.537)					(0.277)		(0.162)
Herfindahl index	0.693	1.210	0.964	0.912	0.334	0.884	0.316	-0.220
	(1.919)	(1.718)	(1.703)	(1.779)	(1.976)	(1.944)	(1.760)	(2.028)
Market share	-0.001	-0.006	0.001	0.000	0.010	0.003	0.004	0.005
	(0.015)	(0.015)	(0.014)	(0.015)	(0.017)	(0.015)	(0.014)	(0.016)
Prefectural GDP	-0.240	-0.197	-0.118	-0.064	0.006	-0.129	-0.179	-0.150
	(0.194)	(0.169)	(0.153)	(0.159)	(0.189)	(0.175)	(0.158)	(0.186)
Size	0.006	0.000	-0.008	-0.011	-0.019	-0.006	-0.008	-0.019
	(0.014)	(0.014)	(0.012)	(0.012)	(0.015)	(0.013)	(0.012)	(0.013)
Cons	3.751	3.205	1.803	1.004	0.163	1.918	2.846	2.672
	(3.350)	(2.886)	(2.579)	(2.682)	(3.238)	(2.988)	(2.658)	(3.171)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.249	0.232	0.236	0.167	-0.028	0.224	0.244	0.119

Panel B. Change in cost ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	-13.297	0.433	-1.493					
	(20.409)	(3.171)	(1.947)					
Relative health	0.816	-2.146		-1.479				
	(3.542)	(1.686)		(1.053)				
Relative size	10.620	10.049			7.245			
	(6.911)	(6.311)			(5.969)			
Acquirer's performance	-5.536					-10.716 b	-9.089 b	
	(8.562)					(5.189)	(4.131)	
Target's performance	-15.697					-3.307	0.884	
	(19.629)					(3.367)	(1.855)	
Acquirer's health	0.427					0.846		-0.647
	(1.716)					(1.158)		(0.950)
Target's health	3.552					2.353		1.284
	(3.334)					(1.702)		(0.964)
Herfindahl index	-9.721	-12.339	-10.073	-10.640	-10.419	-9.397	-16.332	-11.927
	(11.924)	(10.783)	(10.918)	(10.795)	(10.836)	(11.930)	(11.028)	(12.068)
Market share	-0.002	-0.008	-0.067	-0.058	-0.042	-0.046	-0.033	-0.056
	(0.096)	(0.095)	(0.092)	(0.091)	(0.094)	(0.090)	(0.091)	(0.093)
Prefectural GDP	-0.269	-0.362	-1.001	-1.008	-0.650	-1.047	-1.566	-1.185
	(1.207)	(1.063)	(0.980)	(0.962)	(1.034)	(1.072)	(0.987)	(1.105)
Size	-0.129	-0.178 b	-0.110	-0.113	-0.146	-0.060	-0.104	-0.102
	(0.087)	(0.086)	(0.076)	(0.074)	(0.083)	(0.077)	(0.073)	(0.075)
Cons	4.650	7.781	18.995	19.488	11.752	18.668	28.513 c	22.286
	(20.815)	(18.115)	(16.532)	(16.273)	(17.757)	(18.340)	(16.653)	(18.873)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.092	0.053	0.017	0.039	0.031	0.084	0.070	0.023

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

(Table 9. Continued from previous page)

Panel C. Change in X-efficiency

	(1)	(2)	(3)
Relative efficiency	1.660	0.854 c	
	(1.419)	(0.429)	
Acquirer's efficiency	0.010		0.500 c
	(0.496)		(0.268)
Target's efficiency	1.160		-0.446
	(1.463)		(0.508)
Herfindahl index	0.142	0.153	0.164
	(0.103)	(0.102)	(0.102)
Market share	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
Prefectural GDP	0.026 a	0.025 a	0.028 a
	(0.009)	(0.009)	(0.009)
Size	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)
Cons	-0.433 a	-0.416 a	-0.474 a
	(0.160)	(0.155)	(0.156)
Obs	64	64	64
Adjusted R-sq	0.143	0.147	0.138

Panel D. Change in interest rates of deposits

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	0.210	-0.106	-0.065 c					
	(0.418)	(0.066)	(0.039)					
Relative health	0.086	0.031		-0.016				
	(0.073)	(0.035)		(0.022)				
Relative size	0.063	-0.041			-0.109			
	(0.142)	(0.130)			(0.123)			
Acquirer's performance	0.152					0.201 c	0.130	
	(0.175)					(0.106)	(0.083)	
Target's performance	0.323					0.110	0.075 b	
	(0.402)					(0.068)	(0.037)	
Acquirer's health	-0.055					-0.028		0.000
	(0.035)					(0.024)		(0.020)
Target's health	0.058					-0.016		0.024
	(0.068)					(0.035)		(0.020)
Herfindahl index	-0.159	-0.083	-0.097	-0.082	-0.055	-0.127	0.005	-0.045
	(0.244)	(0.223)	(0.219)	(0.224)	(0.223)	(0.243)	(0.222)	(0.248)
Market share	0.001	0.001	0.001	0.001	0.000	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Prefectural GDP	0.061 b	0.060 a	0.062 a	0.058 a	0.051 b	0.060 a	0.072 a	0.063 a
	(0.025)	(0.022)	(0.020)	(0.020)	(0.021)	(0.022)	(0.020)	(0.023)
Size	-0.004 b	-0.003 c	-0.003 b	-0.003 b	-0.002	-0.004 b	-0.004 b	-0.003 c
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Cons	-0.882 b	-0.874 b	-0.904 a	-0.859 b	-0.724 c	-0.850 b	-1.069 a	-0.935 b
	(0.427)	(0.374)	(0.332)	(0.337)	(0.366)	(0.373)	(0.336)	(0.388)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.207	0.158	0.174	0.142	0.145	0.212	0.214	0.142

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

(Table 9. Continued from previous page)

Panel E. Change in interest rates of loans

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	-0.315	0.049	0.077					
	(0.873)	(0.133)	(0.079)					
Relative health	0.117	0.004		0.034				
	(0.152)	(0.071)		(0.043)				
Relative size	0.158	0.199			0.257			
	(0.296)	(0.265)			(0.244)			
Acquirer's performance	0.049					-0.083	-0.222	
	(0.366)					(0.216)	(0.171)	
Target's performance	-0.266					0.017	-0.083	
	(0.840)					(0.140)	(0.077)	
Acquirer's health	-0.100					-0.057		-0.068 c
	(0.073)					(0.048)		(0.038)
Target's health	0.050					-0.050		-0.041
	(0.143)					(0.071)		(0.038)
Herfindahl index	-0.928 c	-0.467	-0.431	-0.436	-0.498	-0.898 c	-0.602	-0.887 c
	(0.510)	(0.453)	(0.444)	(0.446)	(0.444)	(0.498)	(0.458)	(0.479)
Market share	0.004	0.003	0.002	0.002	0.003	0.003	0.003	0.003
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Prefectural GDP	-0.078	-0.028	-0.042	-0.039	-0.020	-0.083 c	-0.057	-0.084 c
	(0.052)	(0.045)	(0.040)	(0.040)	(0.042)	(0.045)	(0.041)	(0.044)
Size	-0.001	0.000	0.001	0.001	-0.001	0.000	0.001	0.000
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Cons	1.379	0.508	0.761	0.715	0.398	1.497 c	1.020	1.509 b
	(0.890)	(0.761)	(0.673)	(0.672)	(0.727)	(0.765)	(0.691)	(0.750)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	-0.062	-0.068	-0.041	-0.047	-0.038	-0.018	-0.023	0.015

Panel F. Change in capital ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	9.152 b	1.779 b	2.061 a					
	(4.400)	(0.675)	(0.422)					
Relative health	0.259	0.436		1.056 a				
	(0.764)	(0.359)		(0.237)				
Relative size	-2.015	-2.990 b			-0.380			
	(1.490)	(1.343)			(1.548)			
Acquirer's performance	-1.057					1.999 c	2.174 b	
	(1.846)					(1.191)	(0.925)	
Target's performance	7.024					-1.719 b	-1.843 a	
	(4.232)					(0.773)	(0.415)	
Acquirer's health	0.060					0.058		0.313
	(0.370)					(0.266)		(0.220)
Target's health	0.063					-0.083		-0.854 a
	(0.719)					(0.391)		(0.223)
Herfindahl index	2.572	2.110	1.478	1.468	0.670	2.807	2.721	1.601
	(2.571)	(2.295)	(2.367)	(2.427)	(2.811)	(2.739)	(2.470)	(2.797)
Market share	-0.003	-0.006	0.011	0.009	0.019	0.004	0.004	0.011
	(0.021)	(0.020)	(0.020)	(0.020)	(0.024)	(0.021)	(0.020)	(0.021)
Prefectural GDP	-0.419	-0.586 a	-0.390 c	-0.315	-0.269	-0.266	-0.280	-0.258
	(0.260)	(0.226)	(0.213)	(0.216)	(0.268)	(0.246)	(0.221)	(0.256)
Size	0.029	0.031 c	0.011	0.007	0.000	0.008	0.008	-0.003
	(0.019)	(0.018)	(0.016)	(0.017)	(0.021)	(0.018)	(0.016)	(0.017)
Cons	5.649	8.531 b	5.056	3.893	3.821	2.986	3.235	3.157
	(4.487)	(3.855)	(3.585)	(3.659)	(4.606)	(4.211)	(3.730)	(4.373)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.371	0.361	0.311	0.276	0.029	0.281	0.305	0.219

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

(Table 9. Continued from previous page)

Panel G. Change in bad loan ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	-8.812	0.074	-3.890 a					
	(13.630)	(2.365)	(1.041)					
Relative health	-0.084	-3.024 b		-2.953 a				
	(2.704)	(1.460)		(0.633)				
Relative size	-2.471	0.488			-6.011			
	(5.723)	(4.859)			(5.254)			
Acquirer's performance	3.343					0.642	-5.158 b	
	(5.206)					(2.903)	(2.484)	
Target's performance	-7.809					0.530	3.531 a	
	(12.597)					(1.777)	(0.995)	
Acquirer's health	-2.794 b					-2.531 a		-2.424 a
	(1.307)					(0.902)		(0.660)
Target's health	1.963					2.334 b		2.553 a
	(2.169)					(1.054)		(0.481)
Herfindahl index	-15.051	1.022	1.870	0.930	3.014	-12.614	-2.686	-11.992
	(9.860)	(7.160)	(7.442)	(6.806)	(9.118)	(8.359)	(7.688)	(7.916)
Market share	-0.047	-0.095	-0.112 c	-0.096 c	-0.141 c	-0.038	-0.084	-0.039
	(0.061)	(0.058)	(0.060)	(0.056)	(0.073)	(0.056)	(0.060)	(0.054)
Prefectural GDP	-3.021 b	-1.100	-0.969	-1.126	-1.982 c	-2.423 b	-1.440 c	-2.421 a
	(1.303)	(0.847)	(0.787)	(0.708)	(0.975)	(0.871)	(0.834)	(0.835)
Size	0.006	0.005	0.013	0.007	0.086	0.002	0.020	0.010
	(0.051)	(0.053)	(0.048)	(0.044)	(0.060)	(0.044)	(0.047)	(0.039)
Cons	52.674 b	18.818	16.155	19.340	31.760 c	42.029 b	24.091 c	41.750 a
	(22.978)	(14.627)	(13.284)	(11.996)	(16.992)	(15.037)	(14.045)	(14.408)
Obs	31	31	31	31	31	31	31	31
Adjusted R-sq	0.488	0.428	0.369	0.474	0.065	0.545	0.405	0.579

Panel H. Change in new bad loan ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	34.491	-0.459	-4.559					
	(46.567)	(6.425)	(4.186)					
Relative health	-7.104	-1.363		-1.074				
	(10.022)	(2.919)		(2.163)				
Relative size	-14.762	-11.102			-10.788			
	(13.523)	(9.973)			(7.394)			
Acquirer's performance	-18.200					-12.568	-9.027 c	
	(13.844)					(6.949)	(4.978)	
Target's performance	32.715					6.098	5.025	
	(40.538)					(4.811)	(3.626)	
Acquirer's health	1.942					1.406		-0.504
	(3.221)					(2.073)		(1.661)
Target's health	-6.278					-1.412		0.934
	(7.648)					(2.425)		(2.108)
Herfindahl index	-20.618	3.908	4.303	8.679	7.110	-12.695	-17.172	5.730
	(29.250)	(15.323)	(14.846)	(14.673)	(13.450)	(24.784)	(19.105)	(23.294)
Market share	-0.076	-0.262 c	-0.235	-0.269 c	-0.299 b	-0.066	-0.046	-0.248
	(0.232)	(0.141)	(0.133)	(0.135)	(0.117)	(0.185)	(0.169)	(0.172)
Prefectural GDP	-4.457	-4.167 b	-3.423 b	-3.523 b	-4.223 b	-2.836	-3.344 b	-3.562
	(3.032)	(1.680)	(1.496)	(1.545)	(1.511)	(2.169)	(1.421)	(2.125)
Size	0.108	0.144	0.086	0.117	0.156	0.061	0.047	0.111
	(0.148)	(0.124)	(0.109)	(0.107)	(0.102)	(0.122)	(0.105)	(0.119)
Cons	76.871	68.255 b	54.358 b	54.347 c	67.919 b	46.717	56.234 b	55.425
	(52.734)	(28.260)	(24.610)	(25.468)	(25.571)	(37.598)	(23.328)	(36.381)
Obs	19	19	19	19	19	19	19	19
Adjusted R-sq	0.120	0.201	0.247	0.193	0.294	0.251	0.333	0.127

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

(Table 9. Continued from previous page)

Panel I. Change in loan ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	-13.337	-3.163	-1.489					
	(14.534)	(2.211)	(1.329)					
Relative health	2.837	1.374		-0.108				
	(2.522)	(1.176)		(0.735)				
Relative size	-3.220	-2.573			-3.933			
	(4.921)	(4.400)			(4.117)			
Acquirer's performance	7.182					2.638	0.709	
	(6.097)					(3.655)	(2.921)	
Target's performance	-8.128					4.316 c	1.513	
	(13.978)					(2.371)	(1.311)	
Acquirer's health	-1.935					-0.877		-0.475
	(1.222)					(0.815)		(0.660)
Target's health	0.420					-1.520		0.196
	(2.374)					(1.199)		(0.670)
Herfindahl index	-3.179	2.834	2.084	2.618	3.230	-2.937	2.799	0.202
	(8.491)	(7.518)	(7.454)	(7.535)	(7.475)	(8.402)	(7.797)	(8.387)
Market share	-0.073	-0.076	-0.058	-0.064	-0.083	-0.051	-0.062	-0.056
	(0.068)	(0.067)	(0.062)	(0.063)	(0.065)	(0.064)	(0.064)	(0.064)
Prefectural GDP	-1.698 c	-0.986	-0.851	-0.948	-1.203 c	-1.238	-0.778	-1.178
	(0.860)	(0.741)	(0.669)	(0.671)	(0.713)	(0.755)	(0.698)	(0.768)
Size	0.050	0.070	0.053	0.061	0.086	0.020	0.053	0.058
	(0.062)	(0.060)	(0.052)	(0.052)	(0.057)	(0.055)	(0.052)	(0.052)
Cons	28.183 c	15.482	13.170	14.330	18.974	20.565	11.948	18.407
	(14.822)	(12.629)	(11.286)	(11.358)	(12.249)	(12.917)	(11.774)	(13.117)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	-0.008	-0.008	-0.003	-0.024	-0.009	0.006	-0.017	-0.033

Panel J. Change in loan growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	18.584	1.715	3.477 b					
	(14.793)	(2.231)	(1.390)					
Relative health	-0.880	1.885		2.228 a				
	(2.567)	(1.186)		(0.745)				
Relative size	-9.163 c	-8.205 c			-3.453			
	(5.009)	(4.439)			(4.496)			
Acquirer's performance	-4.032					2.762	3.603	
	(6.206)					(3.860)	(3.062)	
Target's performance	17.713					0.247	-3.050 b	
	(14.227)					(2.505)	(1.375)	
Acquirer's health	0.605					0.120		0.499
	(1.244)					(0.861)		(0.675)
Target's health	-3.106					-1.985		-1.961 a
	(2.417)					(1.266)		(0.686)
Herfindahl index	-10.598	-8.196	-10.073	-9.731	-11.060	-10.725	-8.039	-10.508
	(8.643)	(7.585)	(7.795)	(7.640)	(8.163)	(8.874)	(8.175)	(8.580)
Market share	0.015	0.008	0.056	0.049	0.059	0.050	0.046	0.054
	(0.069)	(0.067)	(0.065)	(0.064)	(0.071)	(0.067)	(0.067)	(0.066)
Prefectural GDP	-1.468 c	-1.404 c	-0.887	-0.790	-0.860	-0.826	-0.701	-0.795
	(0.875)	(0.748)	(0.700)	(0.681)	(0.779)	(0.797)	(0.732)	(0.786)
Size	0.058	0.080	0.025	0.022	0.025	-0.007	0.021	-0.001
	(0.063)	(0.060)	(0.054)	(0.053)	(0.062)	(0.058)	(0.054)	(0.053)
Cons	26.425 c	24.353 c	15.286	13.544	16.487	14.828	12.214	14.115
	(15.087)	(12.742)	(11.802)	(11.516)	(13.376)	(13.642)	(12.344)	(13.417)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.107	0.123	0.062	0.099	-0.029	0.052	0.044	0.076

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Table 10. OLS Regression Results for the Change in Bank Characteristics after M&As, Robustness Checks

Panel A. Change in ROA

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	0.815	1.253 b	1.319 a					
	(2.755)	(0.502)	(0.301)					
Relative health	0.771	0.139		0.621 a				
	(0.577)	(0.267)		(0.172)				
Relative size	-0.780	-1.161			0.421			
	(1.103)	(0.997)			(1.071)			
Acquirer's performance	-1.127					-0.968	-0.658	
	(1.321)					(0.864)	(0.658)	
Target's performance	-0.582					-1.514 a	-1.336 a	
	(2.622)					(0.529)	(0.297)	
Acquirer's health	-0.130					0.125		-0.048
	(0.300)					(0.201)		(0.166)
Target's health	0.650					0.089		-0.509 a
	(0.536)					(0.271)		(0.165)
Herfindahl index	0.619	1.081	0.843	0.785	0.217	0.822	0.209	-0.463
	(1.932)	(1.708)	(1.692)	(1.764)	(1.948)	(1.941)	(1.736)	(2.026)
Market share	-0.004	-0.007	-0.001	-0.001	0.008	0.000	0.002	0.005
	(0.015)	(0.015)	(0.014)	(0.015)	(0.017)	(0.014)	(0.014)	(0.015)
Prefectural GDP	-0.261	-0.212	-0.136	-0.084	-0.017	-0.166	-0.217	-0.176
	(0.196)	(0.167)	(0.151)	(0.156)	(0.185)	(0.174)	(0.156)	(0.186)
Size	0.004	-0.001	-0.009	-0.012	-0.019	-0.005	-0.007	-0.019
	(0.014)	(0.014)	(0.012)	(0.012)	(0.015)	(0.013)	(0.012)	(0.013)
Cons	4.051	3.432	2.086	1.308	0.544	2.520	3.469	3.102
	(3.377)	(2.850)	(2.550)	(2.647)	(3.174)	(2.979)	(2.624)	(3.168)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.239	0.221	0.226	0.159	-0.028	0.221	0.241	0.110

Panel B. Change in cost ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	-4.913	0.736	-1.032					
	(16.936)	(3.132)	(1.923)					
Relative health	0.434	-2.050		-1.245				
	(3.546)	(1.665)		(1.042)				
Relative size	12.155 c	10.187			7.864			
	(6.782)	(6.226)			(5.857)			
Acquirer's performance	-9.437					-11.848 b	-9.536 b	
	(8.121)					(5.281)	(4.099)	
Target's performance	-7.777					-3.172	0.534	
	(16.119)					(3.234)	(1.850)	
Acquirer's health	0.841					1.080		-0.737
	(1.846)					(1.229)		(0.988)
Target's health	3.213					2.102		1.127
	(3.295)					(1.653)		(0.979)
Herfindahl index	-8.518	-11.189	-8.933	-9.514	-9.513	-7.919	-15.330	-11.552
	(11.878)	(10.661)	(10.799)	(10.698)	(10.658)	(11.857)	(10.813)	(12.025)
Market share	0.011	0.006	-0.053	-0.044	-0.024	-0.039	-0.019	-0.040
	(0.093)	(0.093)	(0.090)	(0.089)	(0.092)	(0.088)	(0.088)	(0.091)
Prefectural GDP	-0.015	-0.163	-0.806	-0.797	-0.389	-0.865	-1.390	-1.050
	(1.205)	(1.045)	(0.965)	(0.949)	(1.012)	(1.064)	(0.971)	(1.101)
Size	-0.124	-0.170 b	-0.101	-0.105	-0.144 c	-0.054	-0.097	-0.099
	(0.085)	(0.085)	(0.075)	(0.074)	(0.081)	(0.076)	(0.072)	(0.074)
Cons	0.709	4.855	16.091	16.360	7.859	15.917	25.782	20.543
	(20.763)	(17.794)	(16.277)	(16.054)	(17.362)	(18.198)	(16.344)	(18.799)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.082	0.031	-0.007	0.013	0.019	0.072	0.061	0.000

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

(Table 10. Continued from previous page)

Panel C. Change in X-efficiency

	(1)	(2)	(3)
Relative efficiency	1.509	0.887 b	
	(1.375)	(0.426)	
Acquirer's efficiency	0.087		0.530 c
	(0.483)		(0.266)
Target's efficiency	0.994		-0.487
	(1.442)		(0.510)
Herfindahl index	0.133	0.144	0.154
	(0.102)	(0.102)	(0.101)
Market share	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)
Prefectural GDP	0.026 a	0.024 a	0.027 a
	(0.009)	(0.009)	(0.009)
Size	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)
Cons	-0.426 a	-0.400 b	-0.452 a
	(0.156)	(0.154)	(0.155)
Obs	64	64	64
Adjusted R-sq	0.145	0.148	0.142

Panel D. Change in interest rates of deposits

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	0.054	-0.098	-0.059					
	(0.358)	(0.066)	(0.039)					
Relative health	0.087	0.031		-0.013				
	(0.075)	(0.035)		(0.022)				
Relative size	0.022	-0.037			-0.097			
	(0.144)	(0.131)			(0.123)			
Acquirer's performance	0.201					0.200 c	0.134	
	(0.172)					(0.110)	(0.085)	
Target's performance	0.169					0.100	0.070 c	
	(0.341)					(0.067)	(0.038)	
Acquirer's health	-0.056					-0.027		0.005
	(0.039)					(0.026)		(0.021)
Target's health	0.056					-0.014		0.021
	(0.070)					(0.034)		(0.020)
Herfindahl index	-0.143	-0.078	-0.091	-0.077	-0.053	-0.116	0.007	-0.018
	(0.251)	(0.224)	(0.220)	(0.224)	(0.223)	(0.247)	(0.223)	(0.250)
Market share	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Prefectural GDP	0.061 b	0.062 a	0.063 a	0.060 a	0.053 b	0.063 a	0.074 a	0.066 a
	(0.026)	(0.022)	(0.020)	(0.020)	(0.021)	(0.022)	(0.020)	(0.023)
Size	-0.004 c	-0.003	-0.003 b	-0.003 c	-0.002	-0.004 b	-0.003 b	-0.003 c
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)
Cons	-0.889 b	-0.911 b	-0.935 a	-0.894 a	-0.776 b	-0.920 b	-1.115 a	-1.005 b
	(0.439)	(0.374)	(0.332)	(0.336)	(0.364)	(0.380)	(0.337)	(0.391)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.176	0.144	0.161	0.134	0.138	0.191	0.200	0.133

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

(Table 10. Continued from previous page)

Panel E. Change in interest rates of loans

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	-0.763	0.056	0.083					
	(0.713)	(0.131)	(0.078)					
Relative health	0.162	0.000		0.035				
	(0.149)	(0.069)		(0.043)				
Relative size	0.267	0.222			0.285			
	(0.286)	(0.260)			(0.240)			
Acquirer's performance	0.315					0.010	-0.185	
	(0.342)					(0.219)	(0.171)	
Target's performance	-0.680					0.014	-0.092	
	(0.679)					(0.134)	(0.077)	
Acquirer's health	-0.147 c					-0.079		-0.077 c
	(0.078)					(0.051)		(0.039)
Target's health	0.080					-0.052		-0.047
	(0.139)					(0.069)		(0.038)
Herfindahl index	-1.042 b	-0.492	-0.452	-0.459	-0.525	-0.969 c	-0.590	-0.958 b
	(0.500)	(0.445)	(0.437)	(0.439)	(0.436)	(0.492)	(0.451)	(0.472)
Market share	0.004	0.003	0.002	0.002	0.004	0.004	0.003	0.004
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Prefectural GDP	-0.096 c	-0.031	-0.047	-0.043	-0.023	-0.093 b	-0.061	-0.093 b
	(0.051)	(0.044)	(0.039)	(0.039)	(0.041)	(0.044)	(0.040)	(0.043)
Size	-0.001	0.000	0.001	0.001	-0.001	0.000	0.001	0.000
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Cons	1.706 c	0.570	0.846	0.796	0.452	1.680 b	1.089	1.674 b
	(0.875)	(0.742)	(0.659)	(0.659)	(0.710)	(0.755)	(0.681)	(0.738)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	-0.018	-0.054	-0.031	-0.039	-0.026	0.003	-0.020	0.038

Panel F. Change in capital ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	8.088 b	1.634 b	1.918 a					
	(3.655)	(0.665)	(0.417)					
Relative health	0.041	0.442		0.997 a				
	(0.765)	(0.353)		(0.232)				
Relative size	-3.132 b	-3.051 b			-0.589			
	(1.464)	(1.322)			(1.502)			
Acquirer's performance	-1.303					1.590	2.104 b	
	(1.753)					(1.211)	(0.921)	
Target's performance	5.994 c					-1.710 b	-1.748 a	
	(3.479)					(0.742)	(0.416)	
Acquirer's health	0.306					0.188		0.389 c
	(0.398)					(0.282)		(0.227)
Target's health	-0.103					-0.055		-0.806 a
	(0.711)					(0.379)		(0.225)
Herfindahl index	3.313	1.935	1.295	1.288	0.542	3.082	2.461	1.887
	(2.564)	(2.263)	(2.344)	(2.386)	(2.733)	(2.720)	(2.431)	(2.759)
Market share	-0.013	-0.013	0.004	0.002	0.011	-0.005	-0.003	0.003
	(0.020)	(0.020)	(0.019)	(0.020)	(0.023)	(0.020)	(0.020)	(0.021)
Prefectural GDP	-0.391	-0.634 a	-0.436 b	-0.366 c	-0.338	-0.287	-0.353	-0.255
	(0.260)	(0.222)	(0.210)	(0.212)	(0.259)	(0.244)	(0.218)	(0.253)
Size	0.027	0.028	0.007	0.003	-0.001	0.008	0.007	-0.003
	(0.018)	(0.018)	(0.016)	(0.016)	(0.021)	(0.018)	(0.016)	(0.017)
Cons	5.131	9.372 b	5.887	4.798	5.030	3.378	4.565	3.106
	(4.481)	(3.778)	(3.533)	(3.580)	(4.452)	(4.174)	(3.674)	(4.314)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.355	0.341	0.285	0.259	0.027	0.264	0.284	0.205

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

(Table 10. Continued from previous page)

Panel G. Change in bad loan ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	-11.521	0.154	-3.775 a					
	(11.232)	(2.363)	(1.041)					
Relative health	-0.115	-3.012 b		-2.884 a				
	(2.616)	(1.458)		(0.633)				
Relative size	-1.437	0.645			-5.675			
	(5.348)	(4.859)			(5.212)			
Acquirer's performance	4.477					0.783	-4.949 c	
	(4.681)					(2.922)	(2.542)	
Target's performance	-10.274					0.392	3.446 a	
	(10.175)					(1.746)	(1.022)	
Acquirer's health	-2.896 b					-2.505 b		-2.371 a
	(1.257)					(0.901)		(0.666)
Target's health	1.795					2.405 b		2.549 a
	(2.118)					(1.050)		(0.499)
Herfindahl index	-15.872	1.018	1.808	0.901	2.989	-11.936	-2.237	-11.394
	(9.750)	(7.168)	(7.457)	(6.821)	(9.060)	(8.418)	(7.777)	(7.984)
Market share	-0.048	-0.093	-0.110 c	-0.094	-0.139 c	-0.037	-0.082	-0.038
	(0.060)	(0.058)	(0.060)	(0.055)	(0.073)	(0.056)	(0.061)	(0.054)
Prefectural GDP	-3.225 b	-1.125	-1.003	-1.156	-1.976 c	-2.330 b	-1.382	-2.327 b
	(1.276)	(0.845)	(0.785)	(0.706)	(0.966)	(0.883)	(0.845)	(0.846)
Size	0.010	0.007	0.016	0.010	0.086	0.002	0.017	0.008
	(0.050)	(0.053)	(0.048)	(0.044)	(0.059)	(0.045)	(0.048)	(0.040)
Cons	56.196 b	19.062	16.556	19.687	31.483 c	40.243 b	22.796	39.965 b
	(22.543)	(14.604)	(13.244)	(11.961)	(16.819)	(15.231)	(14.215)	(14.591)
Obs	31	31	31	31	31	31	31	31
Adjusted R-sq	0.491	0.419	0.358	0.465	0.064	0.529	0.381	0.565

Panel H. Change in new bad loan ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	34.087	-0.024	-4.290					
	(43.535)	(6.531)	(4.260)					
Relative health	-7.235	-1.414		-0.996				
	(9.992)	(2.956)		(2.185)				
Relative size	-19.421	-11.488			-10.809			
	(15.299)	(10.120)			(7.472)			
Acquirer's performance	-17.880					-12.840 c	-9.186 c	
	(12.844)					(7.007)	(5.145)	
Target's performance	30.927					5.457	4.456	
	(36.587)					(4.863)	(3.777)	
Acquirer's health	1.690					1.473		-0.444
	(3.099)					(2.066)		(1.683)
Target's health	-6.158					-1.429		0.637
	(7.495)					(2.433)		(2.159)
Herfindahl index	-22.214	3.970	4.261	8.473	6.779	-12.098	-16.894	5.966
	(29.748)	(15.582)	(15.133)	(14.858)	(13.616)	(25.237)	(19.480)	(23.539)
Market share	-0.064	-0.261 c	-0.231	-0.264 c	-0.293 b	-0.064	-0.042	-0.250
	(0.234)	(0.143)	(0.135)	(0.136)	(0.118)	(0.189)	(0.173)	(0.172)
Prefectural GDP	-4.668	-4.152 b	-3.377 b	-3.474 b	-4.172 b	-2.748	-3.285 b	-3.578
	(3.037)	(1.702)	(1.517)	(1.559)	(1.524)	(2.216)	(1.459)	(2.195)
Size	0.090	0.143	0.082	0.112	0.150	0.054	0.039	0.106
	(0.151)	(0.125)	(0.110)	(0.108)	(0.103)	(0.126)	(0.109)	(0.120)
Cons	80.567	67.713 b	53.294 c	53.255 c	66.812 b	44.764	54.842 b	55.211
	(53.034)	(28.543)	(24.857)	(25.605)	(25.729)	(38.336)	(23.809)	(37.568)
Obs	19	19	19	19	19	19	19	19
Adjusted R-sq	0.103	0.177	0.222	0.174	0.277	0.221	0.302	0.101

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

(Table 10. Continued from previous page)

Panel I. Change in loan ratio

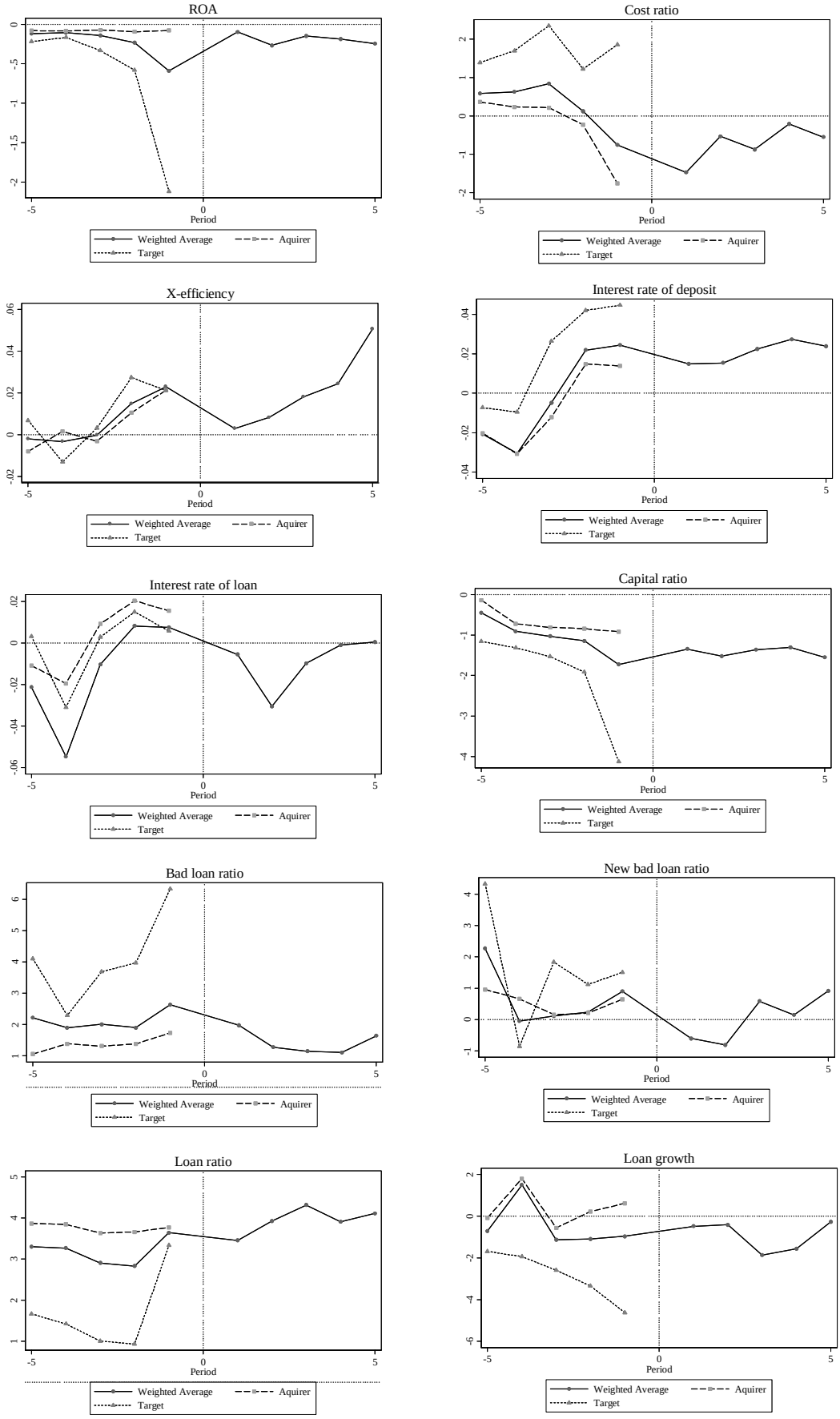
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	-10.473	-3.146	-1.479					
	(12.424)	(2.232)	(1.339)					
Relative health	2.511	1.340		-0.116				
	(2.601)	(1.186)		(0.741)				
Relative size	-2.123	-2.207			-3.602			
	(4.975)	(4.437)			(4.148)			
Acquirer's performance	6.865					2.929	0.844	
	(5.957)					(3.816)	(2.975)	
Target's performance	-5.145					4.301 c	1.522	
	(11.825)					(2.337)	(1.343)	
Acquirer's health	-1.983					-0.940		-0.420
	(1.354)					(0.888)		(0.701)
Target's health	0.073					-1.555		0.139
	(2.417)					(1.195)		(0.695)
Herfindahl index	-4.402	2.420	1.748	2.292	2.858	-3.487	2.526	0.181
	(8.714)	(7.597)	(7.521)	(7.600)	(7.548)	(8.570)	(7.849)	(8.535)
Market share	-0.067	-0.076	-0.059	-0.066	-0.083	-0.047	-0.063	-0.059
	(0.068)	(0.067)	(0.062)	(0.063)	(0.065)	(0.064)	(0.064)	(0.064)
Prefectural GDP	-1.822 b	-1.073	-0.965	-1.061	-1.293 c	-1.305 c	-0.865	-1.272
	(0.884)	(0.745)	(0.672)	(0.674)	(0.717)	(0.769)	(0.705)	(0.782)
Size	0.043	0.065	0.050	0.058	0.082	0.016	0.049	0.056
	(0.062)	(0.060)	(0.052)	(0.052)	(0.058)	(0.055)	(0.053)	(0.053)
Cons	31.236 b	17.665	15.857	16.989	21.190 c	22.408 c	14.169	20.690
	(15.232)	(12.680)	(11.335)	(11.405)	(12.296)	(13.152)	(11.863)	(13.343)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	-0.009	-0.005	0.003	-0.017	-0.005	0.011	-0.011	-0.029

Panel J. Change in loan growth

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative performance	13.162	1.549	3.227 b					
	(12.260)	(2.180)	(1.362)					
Relative health	-0.712	1.838		2.104 a				
	(2.567)	(1.159)		(0.730)				
Relative size	-11.078 b	-8.321 c			-3.823			
	(4.909)	(4.335)			(4.370)			
Acquirer's performance	-2.345					2.850	3.500	
	(5.879)					(3.912)	(3.024)	
Target's performance	12.410					0.020	-2.937 b	
	(11.669)					(2.396)	(1.365)	
Acquirer's health	0.527					0.059		0.482
	(1.337)					(0.911)		(0.696)
Target's health	-2.939					-1.831		-1.903 a
	(2.385)					(1.225)		(0.690)
Herfindahl index	-10.761	-8.938	-10.814	-10.475	-11.712	-11.565	-8.882	-11.276
	(8.599)	(7.422)	(7.645)	(7.490)	(7.951)	(8.785)	(7.978)	(8.469)
Market share	0.010	0.004	0.052	0.045	0.053	0.049	0.041	0.052
	(0.067)	(0.065)	(0.063)	(0.062)	(0.068)	(0.066)	(0.065)	(0.064)
Prefectural GDP	-1.525 c	-1.496 b	-0.977	-0.887	-0.989	-0.928	-0.839	-0.881
	(0.872)	(0.728)	(0.683)	(0.665)	(0.755)	(0.789)	(0.716)	(0.776)
Size	0.056	0.076	0.020	0.018	0.024	-0.005	0.020	0.000
	(0.062)	(0.059)	(0.053)	(0.051)	(0.061)	(0.057)	(0.053)	(0.052)
Cons	27.658 c	26.371 b	17.307	15.665	19.127	17.018	15.118	16.026
	(15.031)	(12.389)	(11.522)	(11.240)	(12.953)	(13.483)	(12.058)	(13.239)
Obs	64	64	64	64	64	64	64	64
Adjusted R-sq	0.101	0.123	0.058	0.096	-0.020	0.049	0.045	0.074

Notes:
1) Standard errors are in parentheses.
2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Figure 1. Characteristics of Acquirer, Target, and Weighted Average in the Pre and Post M&As



Appendix 1. Definition of Variables

- $ROA = \frac{Current\ profit}{Total\ assets} \times 100$
- $Cost\ ratio = \frac{Personnel\ expenditure + Nonpersonnel\ expenditure + Taxes}{Current\ income} \times 100$
- $Interest\ rate\ on\ deposits = \frac{Interest\ on\ deposits}{Deposits\ outstanding} \times 100$
- $Interest\ rate\ on\ loans = \frac{Interest\ on\ loans}{Loans\ outstanding} \times 100$
- $Capital\ ratio = \frac{Total\ capital}{Total\ assets} \times 100$
- $Bad\ loan\ ratio = \frac{Non\ performing\ loans}{Loans\ outstanding} \times 100$
- $New\ bad\ loan\ ratio = \frac{Increase\ in\ non\ performing\ loans + Loans\ written-off}{Loans\ outstanding} \times 100$
- $Loan\ ratio = \frac{Loans\ outstanding}{Total\ assets} \times 100$
- $Loan\ growth = Growth\ rate\ of\ loans\ outstanding \times 100$
- $Size = ln(Total\ assets)$
- $Size\ growth = Growth\ rate\ of\ total\ assets \times 100$
- $Herfindahl\ index = Prefectual\ herfindahl\ index\ calculated\ by\ deposits\ outstanding\ of\ shinkin\ banks$
- $Market\ share = Each\ shinkin\ bank's\ deposits\ outstanding\ as\ a\ proportion\ to\ total\ deposits\ outstanding\ of\ the\ shinkin\ banks\ within\ the\ same\ prefecture \times 100$
- $Relative\ performance = \frac{Target's\ assets}{Acquirer's\ assets + Target's\ assets} \times (Acquirer's\ ROA - Target's\ ROA)$
- $Relative\ health = \frac{Target's\ assets}{Acquirer's\ assets + Target's\ assets} \times (Acquirer's\ capital\ ratio - Target's\ capital\ ratio)$
- $Relative\ size = \frac{Target's\ assets}{Acquirer's\ assets + Target's\ assets}$
- $Acquirer's\ performance = \frac{Acquirer's\ assets}{Acquirer's\ assets + Target's\ assets} \times Acquirer's\ ROA$
- $Target's\ performance = \frac{Target's\ assets}{Acquirer's\ assets + Target's\ assets} \times Target's\ ROA$
- $Acquirer's\ health = \frac{Acquirer's\ assets}{Acquirer's\ assets + Target's\ assets} \times Acquirer's\ capital\ ratio$
- $Target's\ health = \frac{Target's\ assets}{Acquirer's\ assets + Target's\ assets} \times Target's\ capital\ ratio$

Appendix 2. Estimation of X-efficiency

To estimate the X-efficiency of the *shinkin* banks, we first formulate the standard translog cost function as follows.

$$\ln TC_{i,t} = \alpha_0 + \sum_{k=1}^{2} \beta_k \ln y_{kit} + \sum_{l=1}^{3} \alpha_l \ln p_{lit} + 0.5 \sum_{k=1}^{2} \sum_{j=1}^{2} \beta_{kj} \ln y_{kit} \ln y_{jit}$$
$$+ 0.5 \sum_{l=1}^{3} \sum_{h=1}^{3} \alpha_{lh} \ln p_{lit} \ln p_{hit} + \sum_{k=1}^{2} \sum_{l=1}^{3} \delta_{lk} \ln y_{kit} \ln p_{lit} + \ln x_{it} + u_{it}. \quad (1)$$

where

$TC : Total\ cost = Interest\ on\ deposits + Personnel\ expenditure + Nonpersonnel\ expenditure$

$y_1 : Output\ 1 = Loans\ outstanding$

$y_2 : Output\ 2 = Cash + Deposit\ \ paid + Securities$

$$p_1 : Input\ \ price\ 1 = \frac{Interest\ on\ deposits}{Deposits\ outstanding}$$

$$p_2 : Input\ \ price\ 2 = \frac{Personnel\ expenditure}{Employee\ number}$$

$$p_3 : Input\ \ price\ 3 = \frac{Nonpersonnel\ expenditure}{Movable\ and\ immovable\ assets}$$

$x : X\text{-}efficiency\ \ factor$

$u : Random\ error$

And the cost share functions are derived as follows.

$$\frac{\partial \ln TC_{it}}{\partial \ln(p_{lit})} = \frac{\partial TC_{it}}{\partial p_{lit}} \frac{p_{lit}}{TC_{it}} = \frac{p_{lit} x_{lit}}{TC_{it}} = S_{lit}$$

$$S_{lit} = \alpha_l + \sum_{h=1}^{3} \alpha_{lh} \ln p_{hit} + \sum_{k=1}^{2} \delta_{lk} \ln y_{kit}. \quad (2)$$

where

$$S_1 : \frac{Interest\ on\ deposits}{TC}, S_2 : \frac{Personnel\ expenditure}{TC}, S_3 : \frac{Nonpersonnel\ expenditure}{TC}$$

We estimate the translog cost function (1) and the cost share equations (2) by the method of seemingly unrelated regressions (SUR), applying the following homogeneity and symmetry restrictions (3).

$$Symmetry : \beta_{kj} = \beta_{jk}, \alpha_{lh} = \alpha_{hl}$$
$$Homogeneity : \sum_{l=1}^{3} \alpha_l = 1, \sum_{l=1}^{3} \alpha_{lh} = 0 \quad for\ all\ h, \sum_{l=1}^{3} \delta_{lk} = 0 \quad for\ all\ k \tag{3}$$

Estimation results are represented at A2-1. Here we define the residuals of estimation $e_{it} = \ln(x_{it}) + u_{it}$ as the X-efficiency measure. Peristiani (1997) indicates that residual can be transformed so that the minimum is zero, that is, $\hat{\varepsilon}_{it} = \min\{\hat{e}_{it}\} - \hat{e}_{it}$. By taking the exponential, we finally obtain the following modified X-efficiency measure.

$$XEFF_{it} = \exp(\hat{\varepsilon}_{it}). \tag{4}$$

A2-2 indicates the correlation matrix of X-efficiency measure and the profitability variables, ROA and cost ratio. X-efficiency has positive correlation with ROA, and negative correlation with cost ratio. This result can be considered quite reasonable.

A2-1. Estimation Results

	Coef.	
lnTC		
lny1	0.410	a
	(0.042)	
lny2	0.812	a
	(0.052)	
lny1*lny1	0.002	c
	(0.001)	
lny1*lny2	0.000	a
	(0.000)	
lny2*lny2	-0.005	a
	(0.001)	
lnp1	0.225	a
	(0.009)	
lnp2	0.739	a
	(0.010)	
lnp3	0.036	a
	(0.006)	
lnp1*lnp1	0.000	a
	(0.000)	
lnp1*lnp2	0.000	
	(0.000)	
lnp1*lnp3	0.000	
	(0.000)	
lnp2*lnp2	0.000	a
	(0.000)	
lnp2*lnp3	0.000	b
	(0.000)	
lnp3*lnp3	0.000	a
	(0.000)	
lny1*lnp1	-0.018	a
	(0.001)	
lny1*lnp2	0.012	a
	(0.001)	
lny1*lnp3	0.007	a
	(0.001)	
lny2*lnp1	0.035	a
	(0.001)	
lny2*lnp2	-0.027	a
	(0.001)	
lny2*lnp3	-0.008	a
	(0.001)	
Cons	-7.445	a
	(0.268)	
Obs	7920	
R-sq	0.989	

	Coef.	
S1		
lnp1	0.000	a
	(0.000)	
lnp2	0.000	a
	(0.000)	
lnp3	0.000	
	(0.000)	
lny1	-0.018	a
	(0.001)	
lny2	0.035	a
	(0.001)	
Cons	0.352	a
	(0.007)	
Obs	7920	
R-sq	0.972	
S2		
lnp1	0.000	a
	(0.000)	
lnp2	0.000	a
	(0.000)	
lnp3	0.000	a
	(0.000)	
lny1	0.012	a
	(0.001)	
lny2	-0.027	a
	0.001	
Cons	0.513	a
	(0.007)	
Obs	7920	
R-sq	0.935	

A2-2. Correlation Matrix of X-efficiency and Profitability

	X-efficiency	ROA	Cost ratio
X-efficiency	1.000		
ROA	0.039	1.000	
Cost ratio	-0.141	-0.291	1.000

Appendix 3. Changes in Major Components of the Cost Ratio after M&As

A3. Improvement of major components of the cost ratio after M&As: Weighted average

	t=1	t=2	t=3	t=4	t=5	Average
Personnel expenditure ratio						
Pre-merger	-0.34	-0.04	0.19	0.16	0.19	-0.34
Post-merger (t years after)	-1.95	-0.98	-1.31	-0.82	-1.41	-2.21
Diff	-1.61	-0.94	-1.49	-0.97	-1.61	-1.87
t-Statistics	-3.05 a	-1.52	-2.00 c	-1.58	-1.69	-3.50 a
z-Statistics	-2.28 b	-1.28	-2.04 b	-1.42	-1.62	-3.08 a
Nonpersonnel expenditure ratio						
Pre-merger	0.32	0.33	0.41	0.37	0.42	0.32
Post-merger (t years after)	0.30	0.39	0.14	0.56	0.70	0.37
Diff	-0.01	0.06	-0.27	0.19	0.28	0.06
t-Statistics	-0.05	0.16	-0.76	0.52	0.58	0.20
z-Statistics	-0.54	-0.11	-0.88	0.73	0.94	-0.09
Taxes						
Pre-merger	0.11	0.11	0.08	0.05	0.05	0.11
Post-merger (t years after)	0.11	0.18	0.09	0.09	0.12	0.14
Diff	0.01	0.07	0.01	0.04	0.07	0.04
t-Statistics	0.18	1.85 c	0.27	0.92	1.08	1.16
z-Statistics	-0.32	1.74 c	-0.07	0.95	0.55	0.62

Notes:
(1) The numbers represent differences from the average of peers.
(2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Appendix 4. Changes in Major Components of the Capital Ratio after M&As

A4. Improvement of major components of the capital ratio after M&As: Weighted average

	t=1	t=2	t=3	t=4	t=5	Average
Invest in capital ratio						
Pre-merger	0.02	0.03	0.02	0.02	0.02	0.02
Post-merger (t years after)	0.08	0.11	0.17	0.14	0.14	0.13
Diff	0.06	0.08	0.15	0.12	0.12	0.10
t-Statistics	2.99 a	2.45 b	2.92 a	2.55 b	2.53 b	3.60 a
z-Statistics	2.10 b	2.45 b	2.85 a	2.15 b	1.99 b	2.84 a
Special reserve ratio						
Pre-merger	-0.77	-0.74	-0.56	-0.48	-0.57	-0.77
Post-merger (t years after)	-1.33	-1.45	-1.40	-1.32	-1.40	-1.40
Diff	-0.56	-0.71	-0.84	-0.84	-0.83	-0.63
t-Statistics	-4.17 a	-4.70 a	-4.14 a	-3.23 a	-2.57 b	-4.42 a
z-Statistics	-3.68 a	-3.86 a	-3.13 a	-2.45 b	-1.89 c	-3.61 a
Unappropiated profit ratio						
Pre-merger	-0.19	-0.20	-0.08	-0.07	-0.07	-0.19
Post-merger (t years after)	-0.04	-0.28	-0.18	-0.07	-0.18	-0.19
Diff	0.15	-0.08	-0.10	0.00	-0.11	0.00
t-Statistics	1.70 c	-0.26	-1.40	-0.05	-1.18	-0.02
z-Statistics	1.61	1.56	-1.17	0.17	-0.67	1.25

Notes:
(1) The numbers represent differences from the average of peers.
(2) a, b, and c represent significance at the 1% level, 5% level, and 10% level, respectively.

Appendix 5. Method of Constructing New Peers

First we classify definitely predicting acquirers and targets using the estimation results in Table 3. Let $\hat{p}_A$ be the estimated probability of each banks to become acquirer and $\hat{p}_T$ be those to become target. The standard errors of the difference in these two predictions are depicted by (See, e.g., Stata, 2005),

$$s.e = \sqrt{\frac{\hat{p}_A(1-\hat{p}_A)}{n_A} + \frac{\hat{p}_T(1-\hat{p}_T)}{n_T}}$$

We then calculate following z-value,

$$z = \frac{\hat{p}_A - \hat{p}_T}{s.e}$$

We consider the banks with $z > 1.96$ as definitely predicting acquirers, those with $z < 1.96$ as definitely predicting targets, and others as ambiguous. The two way table of the frequency of predicted and observed outcomes are shown in A4. And we define control peer groups as those which suffice following two conditions: (1) those banks which classified as definitely predicting acquirers or targets, and (2) those banks which have not got involved in any merger or acquisition throughout all the sample period. Finally we obtain different two control peer groups for the acquirer and target

respectively, and we can then take the weighted average of characteristics variable of control peer banks.

A5. Frequency of the Predicted and Observed Value

	Def. Target	Ambiguous	Def. Acquirer	Total
Peer	1,026	2,911	3,598	7,535
Target	57	41	11	109
Acquirer	5	37	75	117
Total	1,088	2,989	3,684	7,761