Pre- and Post-merger Performances of Shinkin Banks (Cooperative Banks) in Japan
--- Panel Analysis ---

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Abstract

The purpose of this paper is to describe performances and consequences of Shinkin (Cooperative) bank merger activities that took place from 1989 through 2008 in Japan. Not only were there a large number of mergers, but these Shinkin bank mergers were highly complicated during the sample period compared to other banking institutions. In the paper, Shinkin banks are classified into three groups; namely "the surviving bank" (which takes control of another Shinkin bank), "the absorbed bank" (that has been consumed by a surviving one) and "the control bank" (that has not been related to any merger activities in the same region and during the sample period). Financial indicators, profitability, soundness and efficiency, related to these three classes are analyzed by difference-in-difference method and panel estimation.

Our major findings are as follows; profitability of the surviving banks plummeted immediately after the merger, only to find it improving after a few years. The efficiency of surviving banks improved from cost reduction, especially by reducing labor cost. The soundness of surviving Shinkin banks which was lower than that of control banks became far worse after merging with the absorbed bank. However, their soundness returned to an average level within a few years. Our findings suggest that the consolidation of Shinkin banks can be effective as a strategy for survival.

Key Words: Bank Mergers, Profitability, Soundness, Efficiency, Japan
JEL: G21, G34, R11

1. Introduction

This paper investigates the effects of consolidations among Japanese Shinkin banks, which are deposit-taking cooperatives of small businesses with objectives set by the Shinkin Bank Act, and analyzes whether a consolidation can be an effective means for surviving. During the period when a variety of banks were merged in the 1990s in Japan, after the burst of the bubble economy, the number of Shinkin banks also declined, from 483 in 1971 decreasing almost by half to 267 in 2013. The number of city banks became 5 from 14, and that of second regional banks went down to 41 from 71 during the same period as shown in Table 1 . Here, we have examined whether consolidations of Shinkin banks enhance the efficiency, the profitability and the stabilization of surviving banks, using their financial statements from 1989 to 2008 which includes the period when a large number of Shinkin banks have merged.

The purposes of mergers among banks are not the same. Kazusaka and Naruse (2003) points out that while Shinkin banks have merged in order to strengthen their management platform, aiming at raising profitability and efficiency in economies of scale, city banks aimed at more cost-saving and diversifying revenue stream. The 2012 Annual Report of Deposit Insurance Corporation of Japan (DICJ) describes that the number of bankrupted Shinkin banks was only 1 in 1992 and 1993 respectively, none from 1994 to 1998, 2 in 1999, and 23 between 2000 and 2002. After 2002, the number becomes 0 again, however waves of mergers had been accelerated over those periods.

Harada and Kitamura (2016a) reports that Shinkin bank mergers actively took place in the first half of the 2000's. 46% of all mergers (70 cases of the total 153 cases) took place during the period. Merger activities were not necessarily concentrated in urban areas, the volume of total assets, profits and the cost-efficiency of absorbed Shinkin banks were relatively low, and absorbed Shinkin banks failed to diversify their revenue streams. Harada and Kitamura (2016b) focuses on examining simple merger cases after classifying all cases into five categories, due to the complexity of Shinkin bank mergers (Appendix A explains how Shinkin bank mergers are classified into five categories with some examples and characteristics).

Financial institutions, especially regional financial institutions for small businesses in rural areas, are seriously affected by economic circumstances at a time when the labor force is shrinking as a result of the falling birth rate and the aging population. The decline in domestic population from

the acceleration of demographic aging and the expectation for the regional economy to shrink creates competitive circumstances for regional financial institutions to survive. Regional financial institutions are also facing changes in the regulation system such as globalization and deregulation. As a strategy of how to cope with these economic changes, mergers have been pushed throughout the industry.

The rest of the paper is organized as follows: Section 2 explains background and history of Shinkin banks and related literature is surveyed in Section 3. Section 4 describes our data set and methodology used in the analysis. Section 5 shows estimation results of performances and consequences of Shinkin bank merger activities. Section 6 concludes.

Table 1 about here

2. History of Shinkin Banks

Shinkin banks are deposit-taking regional financial institutions serving small and medium enterprises and local residents. People who live, work, or have an office in the region served by the bank can become a member. Unlike Shinkin banks, credit union (shinyo kumiai) isanother type of deposit-taking regional financial institutions specializing small and medium enterprises, which accepts deposits only from members. However, companies with over 300 employees are not able to become a member.

Shinkin banks were established in 1951 when the Shinkin Bank Act was legislated. The law was amended several times and the most recent revision was in 2014, where the requirements for cases in which Shinkin banks and labor banks prescribing additional rules in their articles were changed. One of the most important changes took place in 1968 when the minimum capital was increased to enlarge its eligibility of members by admitting loans to members up to 20% of total loans, and to strengthen the authorities of the representative meetings. This meant that Shinkin banks can give loans to non-member companies if the share to non-member companies were below 20%.

The size of Shinkin banks is generally smaller than ordinary banks. As of March 2015, the total deposits outstanding amount is 131 trillion yen, but the total loans outstanding amount is slightly less than the half of the total deposits. The difference between deposits and loans is the money deposited to the Shinkin Central Bank.

The Shinkin Central Bank serves as the central bank for Shinkin banks, making loans to and accepting deposits from Shinkin banks. The central bank provides support for Shinkin banks' financial services and in the areas of asset liability management to help Shinkin banks raise profitability and strengthen risk management systems. As the Bank of Japan acts as a clearing house for domestic exchange transactions among banks, the Shinkin central bank serves as a clearing house for Shinkin banks. The central bank invests money in bonds and other assets with using deposits and issuing debentures. As of March 2015, the total amount of funding was over 3.1 trillion yen. The deposits received from Shinkin banks were more than 25 trillion yen. The amount of debentures was 0.63 trillion yen. The outstanding amount of government bonds was over 11 trillion yen, out of the 19 trillion yen total securities outstanding amount. The Shinkin central had been supporting Shinkin banks to resolve various issues, however the collapse of land and share prices in the early 1990s was a major blow to the Shinkin industry.

A number of Shinkin banks received financial assistance by the mutual insurance system of the industry when the Shinkin banks merged other unhealthy Shinkin banks. Two laws for promoting capital injection to solvent banks were enacted in 1998 but Shinkin banks were seldom recapitalized under the laws despite the decreasing number of Shinkin banks.

3. Related literature

Mergers among financial institutions increased from the late 1990s to the early 2000s after banks suffered from a tremendous amount of non-performing loans in Japan. Merger activities seemed to have calmed down as the number of mergers suddenly declined, until regional financial institutions started to merge again in recent years. Regional financial institutions were seriously affected by changes in economic circumstances such as falling birth rate and the aging population. Although mergers might seem to be a way for survival, there are limited numbers of related studies examining the effect and consequences of mergers among Japanese regional financial institutions. There are some literature analyzing the consequences of regional banks' mergers, but only a few for Shinkin banks. The organizational structure and purpose for the establishment of Shinkin banks are quite different from those of regional banks, as explained in the previous section, although both of them are located in prefectures.

Berger et al. (1999) explains that there are two motives for mergers. The first motive is to

maximize the value of shares. As Berger et al. (1999) points out, banks choose to merge in order to maximize the value of shares owned by existing shareholders to expand market power. Financial institutions are able to raise market power by increasing cost efficiency. Applying what is analyzed by Berger et al. (1999) for Shinkin banks are not appropriate because first of all, Shinkin banks are not corporations like private banks or limited companies. They are membership organizations and cooperatives of small businesses so Shinkin banks do not need to expand its market power. Their capital is membership account that is composed mainly of initial contributions by their own members. The second motive behind choosing mergers is that equity of Shinkin banks are not traded at secondary markets. Shinkin banks do not have the incentive for maximizing its value since their lending outside operational area is limited by law. Their financial statement is the only available data for analyzing Shinkin banks.

There are some related literature that analyze Shinkin banks using financial statements. Hoshino (1992) looks at the effect of consolidation by examining 13 consolidated Shinkin banks in 1971. Descriptive statistics are compared for both consolidated Shinkin banks and those not involved with Shinkin banks located in the same operational area with similar deposit amounts. Hoshino (1992) finds that consolidated Shinkin banks are inferior than those not involved with Shinkin banks in terms of managerial indicators such as cost, soundness, stability and productivity. He also finds that managerial indicators significantly changed after the consolidation and that the worst Shinkin banks were consolidated ones. This means that merger Shinkin banks had heavy financial burdens. The findings led to a negative conclusion that consolidation decreased profitability and loan-to-deposit ratio of merger Shinkin banks compared to those that were not involved.

The number of consolidations among Shinkin banks increased after the 1990s as shown in Table 1, and it is considered that literature only examining 13 cases is not sufficient. Adachi (2012) examines reasons for Shinkin banks having merged and whether they have achieved earnings power or strengthened managerial base with merger activities in Aomori and Iwate prefecture. There are a few studies that compare changes in efficiency of Shinkin banks. Inoue (2003) conducts a survey on the number of Shinkin banks as well as the number of decreased Shinkin banks based on regions (they are not the same number as we explained in the paper). Inoue finds that smaller Shinkin banks or Shinkin banks located in small cities have achieved the economy of scale and gained merits of a merger, however, the effect of cost savings is temporal and the long-term positive effect pf a merger

would be limited. Sakai, Tsuru and Hosono (2009) examine not only efficiency, profitability (ROA) nor soundness (capital ratio and non-performing loan ratio) see the effects of consolidations among Shinkin banks. Their findings show that merged Shinkin banks and absorbed Shinkin banks are less profitable, worse cost efficient and have inferior soundness compared to absorbed Shinkin banks. Our findings are similar to what Sakai, Tsuru and Hosono (2009) found although the sample period is different from that examined in their paper where one of the major interests is to see the reasons of mergers. The hypothesis in the paper focuses on maximizing shareholder value by Berger et al. (1989), financial stability hypothesis and empire hypothesis by managers. Based on the sample period between 1984 and 2002, Sakai, Tsuru and Hosono (2009) conclude that financial stability hypothesis is the most plausible.

4. Data and Methodology

4.1 Data

We extracted data on Shinkin bank's managerial performance from *Shinkin Banks' Financial Statement* (*Zenkoku Shinyoukinko Zaimshohyo Bunseki*). Our sample period is from 1989 to 2008. As shown in the previous section, the merger movement has reached greatest proportions from 2000 through 2004. 70 cases of total 153 cases (i.e. 46% of all mergers) took place during this period. Although our sample period ends at the year 2008, the merger activities have been settled and the number of them is small after 2009.

In the previous section, Shinkin banks are classified into three groups: "the surviving bank" (that takes control of another Shinkin bank); "the absorbed bank" (that has been consumed by a surviving one) and "the control bank" (that is set up in a way that it belongs to the same area as the surviving bank and has not been related to any merger activities during the sample period). From this subsection onward, we call the surviving bank as “the merger”, the absorbed bank as “the absorbed” and the control bank as “the control”.

The reason for area matching is the distinctive characteristics of Shinkin banks. Shinkin banks limit their lending, in principle, to members, which comprise local residents and small- and medium-sized enterprises within a region.[1] Yamamoto (2011) and Horie (2015) point out the importance of area matching to assess the regional banks’ performances because regional banks are

[1] http://www.shinkin-central-bank.jp/e/financial/index.html#fi04

under the economic influence of their operating area.

In order to evaluate the pre- and post-merger effect on Shinkin banks' performances, we selected a sample where data of Shinkin bank characteristics are available for the merger year and every 5 years before and after the merger year. Due to the merger process, the number of banks dropped. The greater part of mergers was pair mergers involving two banks at a time, but sometimes three or more banks were involved. Some mergers turned to be the absorbed in the sample period. Table 2 shows the sample size of the merger, the absorbed (targets), and the control. Figure 1 and 2 present the number of mergers by year and prefecture, respectively.

In our analysis we use the standard balance sheet ratios to estimate the pre- and post-merger effects on Shinkin Banks' performances. The return on assets (ROA), net business income, and loans to deposit spread, and overall interest spread are used as measures for a bank's profitability. Cost to income ratio, Personnel expenses ratio, and cost of equipment ratio are measures for its efficiency terms of cost reduction. Capital adequacy ratio (CAR) and Loans to Deposits ratio are measures for soundness (which means being financially secured) of Shinkin banks. The following table shows the details of these variables.

List of variables

ROA		Net income (total pro t after value adjusted)/total assets
Gross Profits		Operating income - Operating Expense
	Operating income	Interest income + Fees and commissions + other operating income
	Operating cost	Interest expense + Fee and commissions + other operating expenses
Net Business Income		Gross Profits - (General and administrative expense + Provision for possible loan losses)
Loans to Deposit spread		(Interest on loans and discounts / Loans and bills discounted) - ((Interest on deposit + General and administrative expenses) / Deposits)
Overall interest spread		(Interest income/A) - ((Interest expenses + General and administrative expenses)/B)

	A	Due from banks + Loans to financial institutions + Monetary debt purchased + Trading securities + Securities + Loans and bills discounted
	B	Deposits + Negotiable certificates of deposit + Borrowed money
Loans to total asset ratio		Loans/Total assets
Deposits to total asset ratio		Deposits/Total assets
Cost income ratio		General and administrative expenses/ Total income
Personnel expense ratio		Personnel expenses/Total income
Cost of equipment ratio		Cost of equipment/Total income
Capital Adequacy Ratio		(Total income - Total liabilities)/Total income
Loans to Deposit Ratio		Loans/Deposits

4.2 The post-merger performances of Shinkin banks

Before estimating the effect of mergers on managerial performances of Shinkin banks, we briefly looked at key balance sheet indicators, profitability, soundness and efficiency, over a 11-year period before and after 5 years as a reference of the merger-year. Figures 3-1 to 3-3 compare some characteristics of these indicators of the merger (referred to as "M" in Figures), the absorbed (referred to as "A" in Figures), and the control (referred to as "C" in Figures). We denoted the year of mergers as period t and every 5 years before and after the period t as period $t+i$, (i = -5, -4, …, 0, 1, …, 5), respectively.

Profitability

Figure 3-1 shows the ROA and ratio of Net business income to total assets for the 11-year periods, $t+i$ (i = -5, -4, …, 0, 1, …, 5). It can clearly be seen that both indicators for the absorbed sharply decline from 0.2% atperiod t-5 to -0.6% at period t-1, while both the merger and the control have remained positive for 5 years before the merger year t. Profitability of the control has stayed positive atperiod t and the following 4 years, but dropped at period $t+5$. While profitability of the merger temporally becomes negative atperiod t, it gradually begins to recover in two years after the mergers and stays positive. Looking at figure 3-1, it is likely that the absorbed is less profitable than the merger and the control. For 5 years after the merger year t, profitability of the merger becomes lower than the controls, which suggests that there is some merger effects on profitability.

Figure 3-1 about here

Efficiency (in terms of cost reduction)

Figure 3-2 shows patterns and trends in efficiency indicators. The cost income ratio of the absorbed is higher than others, which implies that Shinkin banks with relatively high cost tend to be the absorbed. The cost income ratio of the control is lower than the merger for the first two periods, then becomes larger than the merger. On the other hand, the merger keeps its cost income ratio low since period t-3. The cost income ratio of the merger especially dropped soon after the merger-year *t*. This pattern can clearly be seenin the personnel expense to income ratio and not in the cost of equipment income ratios. This pattern suggests that mergers may improve cost efficiency through attrition.

Figure 3-2 about here

Soundness

Measures for soundness of Shinkin banks are CAR and loans to deposits ratio. According to Figure 3-3, CAR of the control is the highest among all banks, while loans to deposits ratio is the lowest of all throughout the sample periods. CAR of the absorbed is the lowest among banks and steadily declines between the periods t-5 and t-1. The absorbed tends to be under-performing and unhealthy. CAR of the merger seems to deteriorate as a result of mergers. It slightly increases after mergers but do not regain its pre-merger level. Loans to deposits ratios tend to decline throughout the sample periods, which reflect that loans have been sluggish in the entire financial industry. Neither of these two measures reveals clear merger effects on Shinkin bank soundness.

Figure 3-3 about here

5. Merger effects

5.1 The consequences of Mergers

We investigated the consequences of mergers by comparing the merger's characteristics variables of

pre- and post- merger periods after controlling trends in their operating area.

Let X_{t-l} $(l = 1,2,\cdots,5)$ be a characteristic variable X of a merger bank at the pre-merger period $(t-l)$, where *t* denotes the year of mergers. Similarly, X_{t-l}^{C} is a variable of a control bank at pre-merger period $(t-l)$, where the control bank is in the corresponding area of the treatment bank (*i.e.*, the merger). The gap between them $(X_{t-l} - X_{t-l}^{C})$ for each *l* is an estimated pre-merger variable X and is denoted by $\hat{X}_{t-l}$. Then we take a simple average over *l,*

$\frac{1}{5}\sum_{l=1}^{5} \hat{X}_{t-l} = \hat{X}_{pre}$,

in order to construct the average pre-merger relative value $\hat{X}_{pre}$. For the post-merger value of X, we obtain X_{t+l} $(l = 1,2,\cdots,5)$ and X_{t+l}^{C} in the same manner as the pre-merger value. Then we take a difference of $\hat{X}_{pre}$ and X_{t+l}^{C} for each *l*, denoting the difference by $\hat{X}_{post,t+l}$. Now we are in a position to test whether the difference between the post-merger value of $\hat{X}_{post,t+l}$ and the average pre-merger relative value $\hat{X}_{pre}$ is significantly zero or not for each $l = 1,3,5$. In addition to the t-test for equal means, we also perform Wilcoxon signed-rank test for the null hypothesis that the distribution of $(\hat{X}_{pre} - \hat{X}_{post,t+l})$ has median zero. Test results are summarized as follows:

Profitability

Table 3-1 shows the differences of profitability variables of the merger between the pre-merger period and each post-merger periods. Net business income (as a portion of total assets) and ROA significantly recovered from the 3-year period after mergers. Loans to deposits spread considerably but did not show a significant increase, from -0.569 to -0.335 between the 3-year period and the 5-year period after mergers. While overall interest spread steadily, it did not show significant increase throughout the post-merger periods.

Table 3-1 about here

Efficiency (in terms of cost reduction)

Table 3-2 shows that cost to income ratio as an indicator of efficiency significantly decreases immediately after the merger. We decomposed the cost ratio into two major components: personnel expense and cost of equipment to income ratios, respectively. Then we found that the personnel expense ratio significantly decreases. The results show that mergers contribute to cost reduction

especially in the personnel cost.

Table 3-2 about here

Soundness

From Table 3-3, we see that CAR and loans to deposits ratios dropped soon after mergers, which corresponds to what we see in Figure 3-3. While CAR steadily recovered between the 1 year and the 5 year post-merger periods, loans to deposits ratios continue to decrease. Table 3-3 suggests that mergers, to some extent, strengthen the soundness of Shinkin banks, which presents a contrast to the result in Table 3-3.

Table 3-3 about here

5.2 Panel data analysis

In this subsection, we performed a fixed effect model of panel data analysis to test whether the Shinkin banks' mergers have positive effects on their performances. The estimation equation is

$Y_{it} = \alpha_0 + \sum_{l=-5}^{5} \beta_l MYD_i(l) + YD_t + u_i + \varepsilon_{it}$,

Where Y_{it} is the Shinkin bank's characteristic variable, α_0 is a constant, YD_t ($\mathrm{t} = 1990, 1991, \cdots 2008$) is a year dummy, u_i is a fixed effect of Shinkin bank *i*, and ε_{it} is an error term. $MYD_i(l)$ is a merger-dummy which is equal to 1 if Shinkin bank *i* is the merger at the period *l* (given that *t* is the merger year, $\mathrm{l} = \mathrm{t}-5, \cdots, \mathrm{t}-1, \mathrm{t}, \mathrm{t}+1, \cdots, \mathrm{t}+5$). From the above equation, the effect of mergers on Shinkin bank's performance at period *l* is estimated as β_l. β_l refers to the difference-in-difference estimator.

By the Financial Rehabilitation Law and the Financial Function Strengthening Law in 1998, the government prompted capital injection to solvent banks, undertaking actions such as business transfers and mergers.. Although Shinkin banks have received no government recapitalization until 2006, the Deposit insurance corporate provided financial assistance to those Shinkin banks that merge failed Shinkin banks between 1999 and 2002. In order to discount the effect of financial support by the Deposit insurance corporate on the performances, we perform estimations on all cases and the cases excluding the three cases where financial supports are

provided in the face of a merger. Estimation results are shown below.

Profitability

Table 4-1 provides the estimation results on profitability indicators, ROA, net business income to total assets ratio, loans to deposits spread, and overall interest spread. We see profitability indicators but loans to deposits spread deteriorate at the merger year *t*. ROA and net business income ratio significantly decrease between the periods of merger year *t* and 2-years after merger *t+2*. Then both indicators rise from -1.14 at the period t+2, to 0.38 at the period t+3 on ROA, and from -0.97 at the period t+2, to 0.35 at the period t+3 on net business income ratio, respectively. The merger tends to be less profitable relative to the control over the pre-merger 5 years. For the post-merger periods, profitability tend to improve within three years, which seems even higher relative to that of the control. Table 4-1 suggests that the merger is relatively less profitable before merges, even though it temporally decreases its profitability at the merger year. It then becomes more profitable after a while, *i.e.*, about three years after mergers.

Table 4-1 about here

Efficiency in terms of cost reduction

Efficiency in terms of cost reduction is summarized in Table 4-2. The cost income ratios are relatively higher than the control during pre-merger 5 periods, while they significantly decrease over up to 5 periods after mergers. Decomposing the cost income ratios into two major components, they are personnel expenses and cost of equipment to income ratios. From Table 4-2 we see that personnel expenses significantly and considerably decrease after mergers. On the other hand, we cannot obtain significant results on the cost equipment to income ratios. Table 4-2 suggests that mergers promote a reduction in personnel expenses to income ratio, leading to better cost efficiency.

Table 4-2 about here

Soundness

The measures of soundness are CAR and loans to deposits ratio. Table 4-3 shows that CAR is

significantly lower relative to the control for the pre-merger periods. The post-merger CARs over up to 5 years after merger continued to deteriorate, although none of them were significant. For loans to deposits ratios, we cannot obtain significant results, showing that loans to deposits ratios are relatively low for the control throughout the sample periods. Table 4-3 implies that relatively unhealthy banks tend to be the merger.

Table 4-3 about here

Finally, we briefly mentioned the results of the sample excluding the cases where the merger received financial support from the deposit insurance corporate. The results show a similar tendency to that of all the sample estimations.

In summary, there is some evidence that mergers have a cost efficiency effect on Shinkin banks' post-merger performances. The profitability tends to increase in approximately three years after mergers. As for soundness, mergers may deteriorate the CARs of the merger and weaken its soundness.

6 Conclusions

In this paper, we analyze effects of mergers on performances of Shinkin banks by reviewing the data, statistically comparing and estimating the pre- and post-merger financial indicators. All of them indicate that mergers contribute to improving profitability and promote cost efficiency, and especially reduce personnel expenses to income ratios. More closely, our main results show that mergers improve the profitability of the merger even though they may temporally dampen it at the merger-year. Mergers may also increase efficiency by cutting costs, especially in personnel expenses, and slightly improve CARs without regaining its pre-merger level. In summary, mergers have positive effects on the merging Shinkin banks.

The recent wave of mergers in the small/medium and regional banking industry reveals that financial institutions have entered a new stage. Our results that mergers improve Shinkin banks' performance are supportive of the recent wave of mergers.

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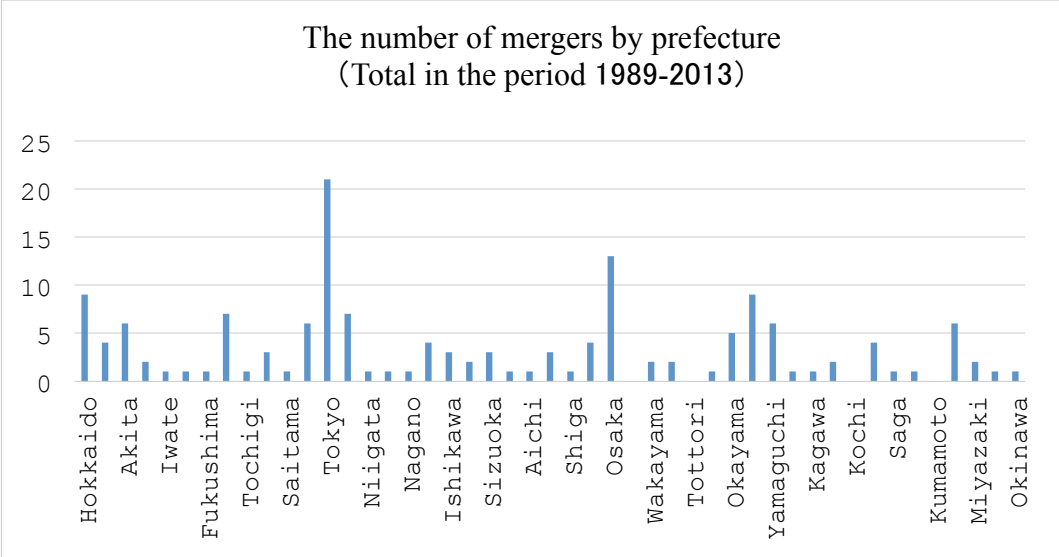
Table 1 Trends in the number of Insured Financial Institutions

Fiscal Year End	Banks				Shinkin Banks	Credit Cooperatives	Labor banks
	City Banks	Regional Banks	Regional Banks II	Trust Banks			
1971	14	61	71	7	483	524	—
1975	13	63	72	7	471	489	—
1980	13	63	71	7	461	476	—
1985	13	64	69	11	456	449	—
1989	13	64	68	16	454	415	47
1990	12	64	68	16	451	408	47
1995	11	64	65	30	416	370	47
2000	9	64	57	31	372	281	40
2005	6	64	47	21	292	172	13
2008	6	64	44	20	279	162	13
2010	6	63	42	18	271	158	13
2011	6	64	42	18	271	158	13
2012	6	64	41	16	270	157	13
2013	5	64	41	16	267	155	13

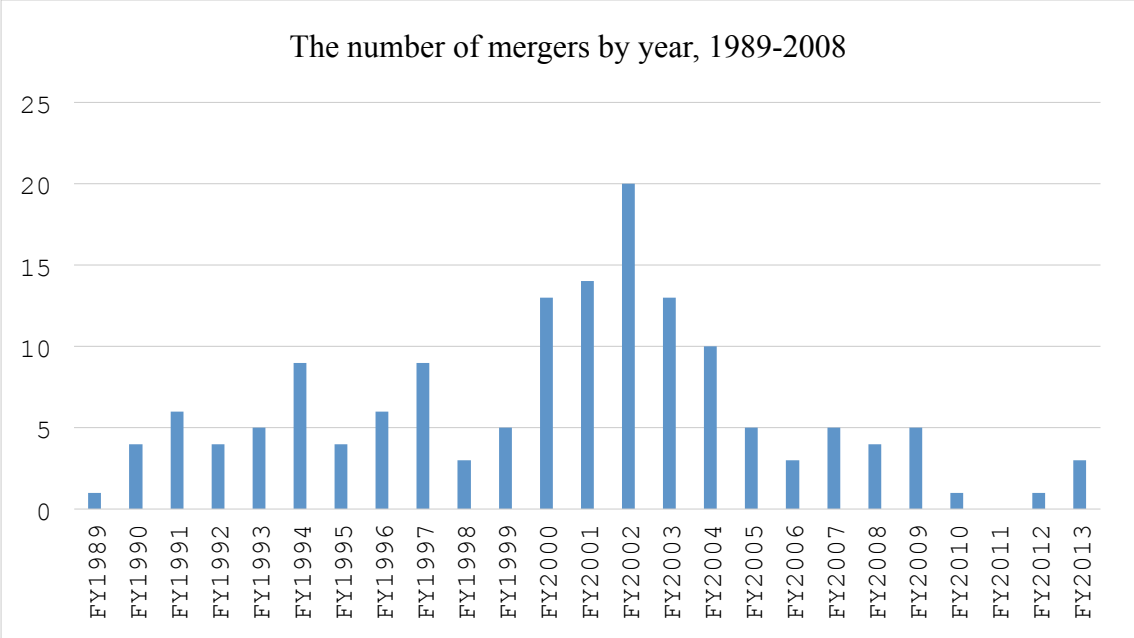
Source: Annual Report 2014/2015, Deposit Insurance Corporation of Japan.

Figure 1 Merger Activities in Shinkin banks in prefecture



Source: *History of Shinkin Banks' mergers (Shinyokinko gappei no rekishi)* from The National Association of Shinkin Banks Web site: http://www.Shinkin.org/Shinkin/history/index.html

Figure 1 The number of merger activities by year



Source: *History of Shinkin Banks' mergers (Shinyokinko gappei no rekishi)* from The National Association of Shinkin Banks Web site: http://www.Shinkin.org/Shinkin/history/index.html

Table 2 Merger activities in the sector of Insured Financial Institutions

Fiscal Year End	Banks				Shinkin Banks	Credit Cooperatives	Labor banks
	City Banks	Regional banks	Recional Banks II	Trust Banks			
1971	14	61	71	7	483	524	—
1975	13	63	72	7	471	489	—
1980	13	63	71	7	461	476	—
1985	13	64	69	11	456	449	—
1989	13	64	68	16	454	415	47
1990	12	64	68	16	451	408	47
1995	11	64	65	30	416	370	47
2000	9	64	57	31	372	281	40
2005	6	64	47	21	292	172	13
2008	6	64	44	20	279	162	13
2010	6	63	42	18	271	158	13
2011	6	64	42	18	271	158	13
2012	6	64	41	16	270	157	13
2013	5	64	41	16	267	155	13

Source: *Annual Report 2014/2015*, from Deposit Insurance Corporation of Japan web site: https://www.dic.go.jp/shiryo/nenpo/index.html

Table 3　Sample by prefecture / area

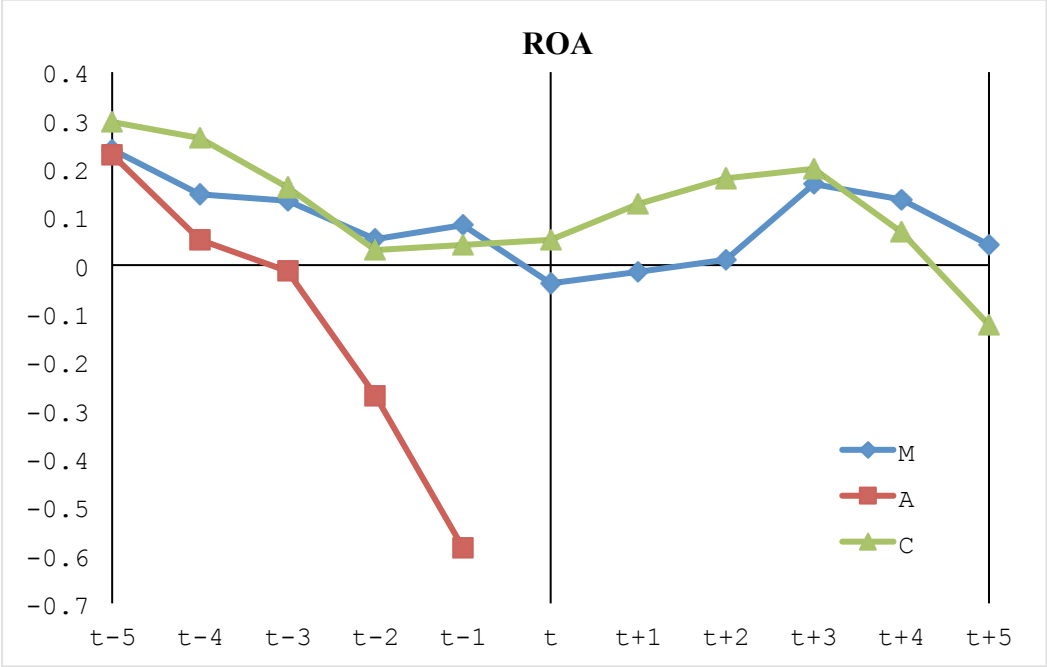
		Mergers (the survivin g banks)	Absorbe d banks	Control banks （non-relate d to any merger activities）		Mergers (survivin g banks)	Absorbe d banks	Control banks （non-relate d to any merger activities）
1	Hokkaido	3	3	14	Hokkaido	3	3	14
2	Aomori	0	0	1	Tohoku	0	0	18
3	Akita	0	0	0				
4	Yamagata	0	0	2				
5	Iwate	0	0	5				
6	Miyagi	0	0	3				
7	Fukushima	0	0	7				
8	Gunma	1	1	4	Kanto	14	20	22
9	Tochigi	1	1	1				
10	Ibaragi	1	1	1				
11	Saitama	0	0	3				
12	Chiba	3	4	2				
13	Kanagawa	1	1	2				
14	Tokyo	7	12	9				
15	Niigata	1	1	8	Koshinetsu	3	3	12
16	Yamanashi	1	1	1				
17	Nagano	1	1	3				
18	Toyama	1	1	5	Hokuriku	3	4	10
19	Ishikawa	1	1	1				
20	Fukui	1	2	4				
21	Shizuoka	0	0	10	Tokai	3	4	29

22	Gifu	1	1	4				
23	Aichi	1	2	12				
24	Mie	1	1	3				
25	Shiga	1	1	2	Kansai	6	10	17
26	Kyoto	1	4	1				
27	Osaka	3	3	6				
28	Nara	0	0	3				
29	Wakayama	1	2	0				
30	Hyogo	0	0	5				
31	Tottori	0	0	3	Sanin/	4	4	10
32	Shimane	1	1	1	Chugoku			
33	Okayama	2	2	5				
34	Hiroshima	1	1	0				
35	Yamaguchi	0	0	1				
36	Tokushima	1	1	1	Shikoku	3	3	7
37	Kagawa	1	1	1				
38	Ehime	1	1	3				
39	Kochi	0	0	2				
40	Fukuoka	1	4	6	Kyusyu	4	7	20
41	Saga	0	0	3				
42	Nagasaki	1	1	0				
43	Kumamoto	0	0	4				
44	Oita	0	0	2				
45	Miyazaki	1	1	3				
46	Kagoshima	1	1	2				
47	Okinawa	1	1	0	Okinawa	1	1	0
Total		44	59	159		44	59	159

Source: *History of Shinkin Banks' mergers (Shinyokinko gappei no rekishi)* from The National Association of Shinkin Banks Web site: http://www.Shinkin.org/Shinkin/history/index.html

Figure 3 Long term effect of pre- and post-mergers on key balance sheet indicators

Figure 3-1 Profitability



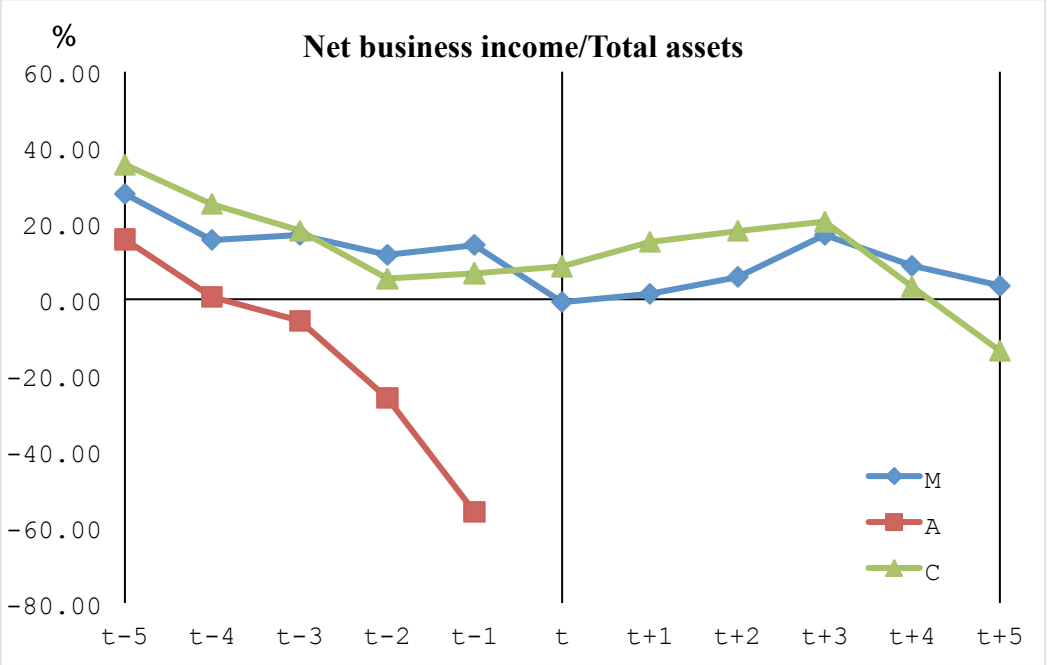
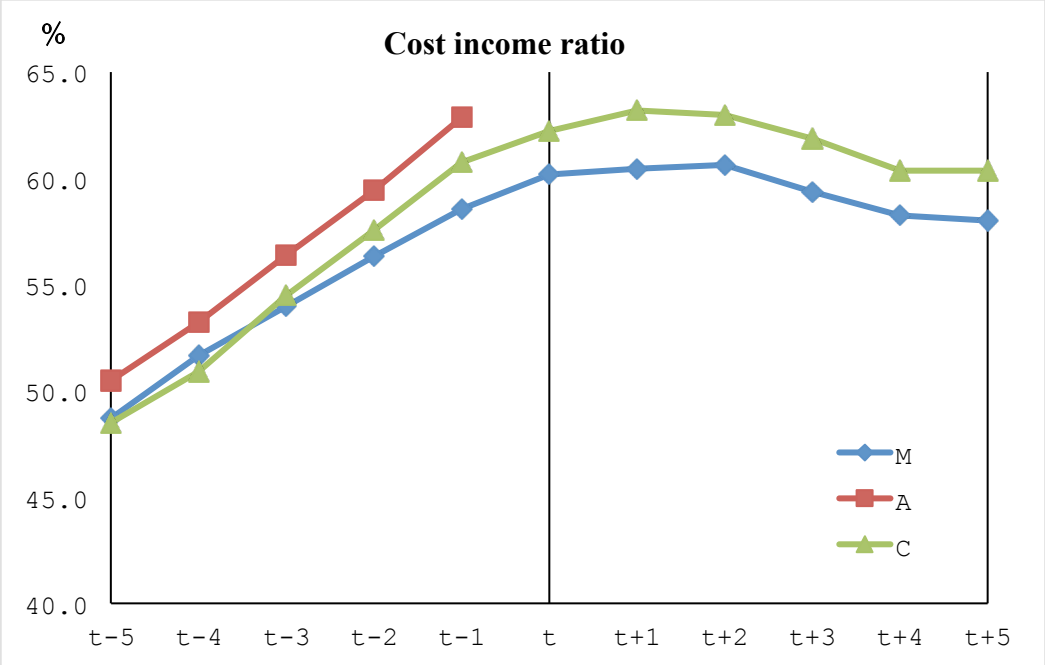
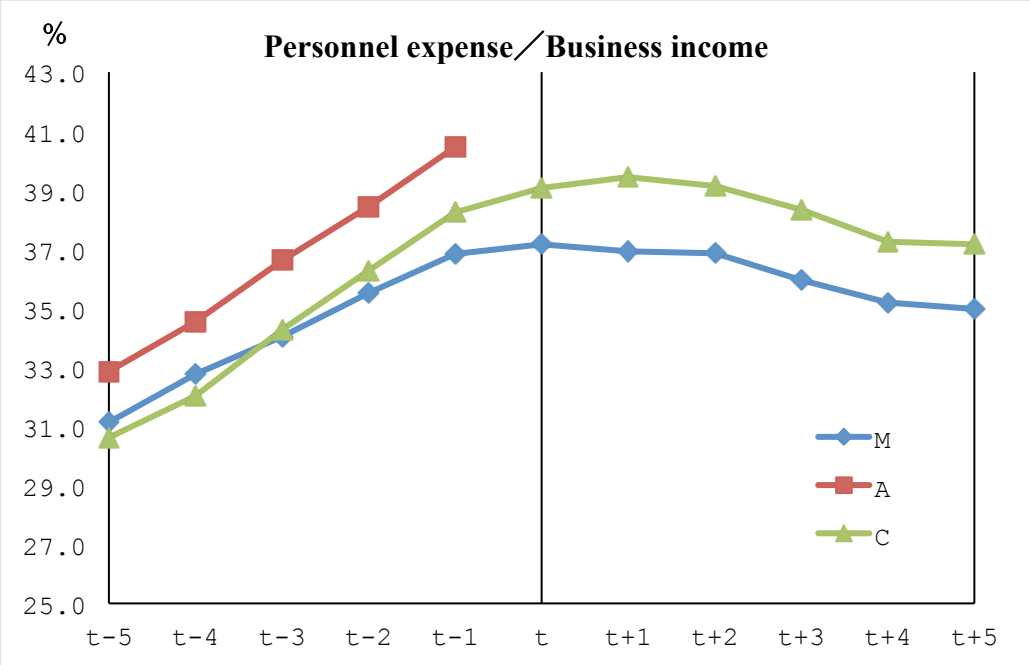


Figure 3-2 Cost income ratio





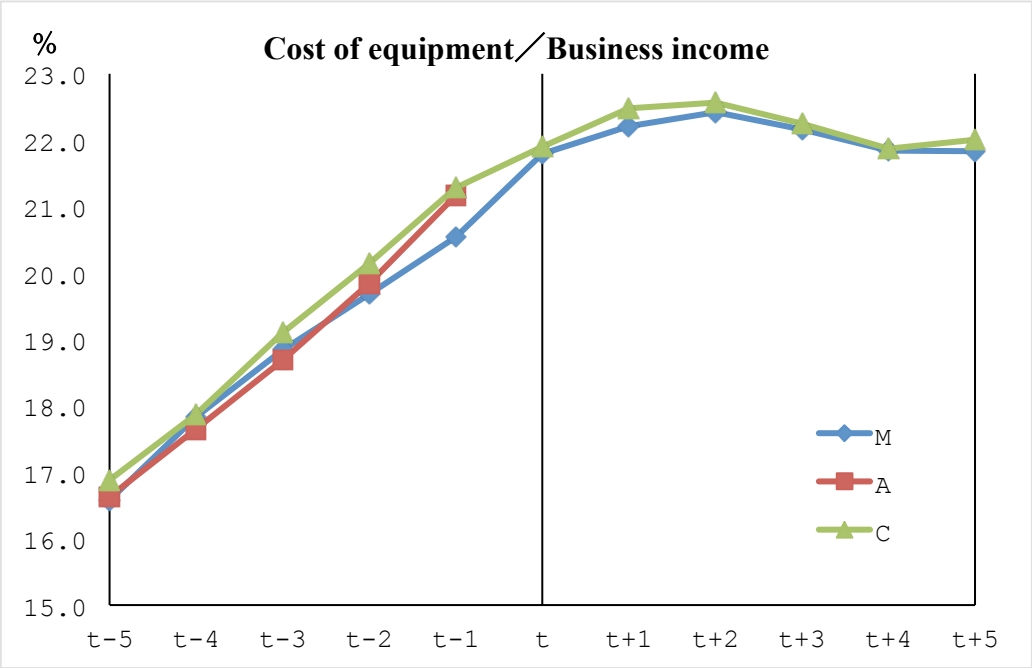
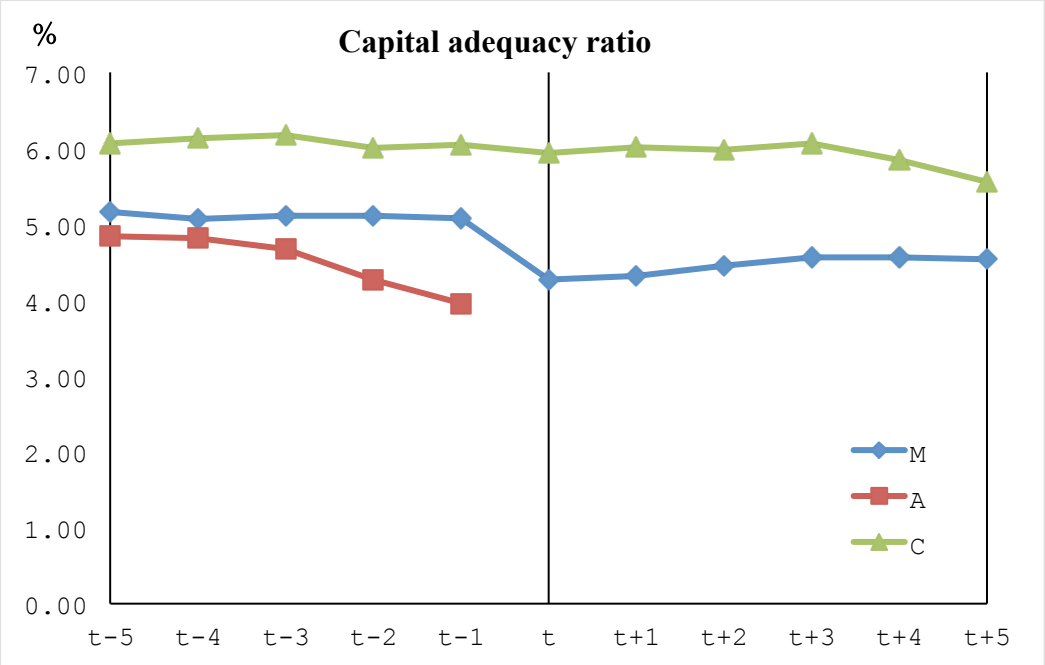


Figure 3-3 Soundness



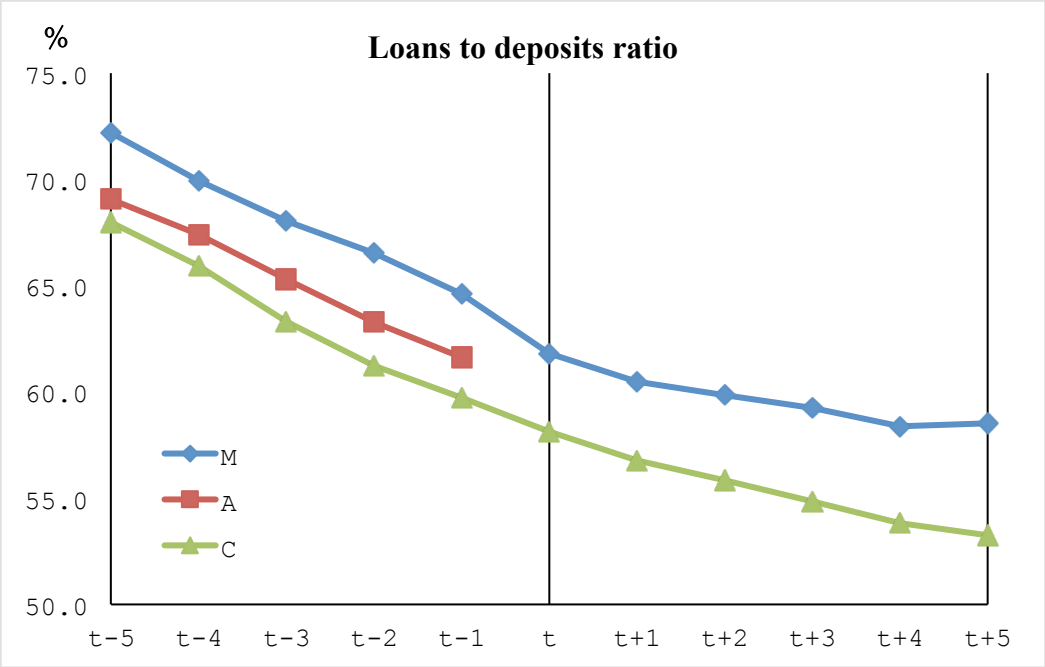

%
Loans to deposits ratio
75.0
70.0
65.0
60.0
55.0
50.0
M
A
C
t-5
t-4
t-3
t-2
t-1
t
t+1
t+2
t+3
t+4
t+5

Table 3-1. Test Results on profitability

		Wilcoxon sined rank test			*t* test		
	The difference in means		Z-value	P-value		t-value	P-value
Net business income							
1 year after merger	0.776		0.669	0.504		0.98	0.33
3 year after merger	1.435		0.431	0.666	**	1.75	0.08
5 year after merger	2.630	***	2.917	0.004	***	3.03	0.00
ROA							
1 year after merger	-1.348		0.894	0.371	*	-1.855	0.067
3 year after merger	-0.339		1.107	0.268		-0.625	0.534
5 year after merger	1.578	***	3.182	0.001	**	2.133	0.036
Loans to deposits spread							
1 year after merger	-0.516		1.007	0.314		-0.632	0.529
3 year after merger	-0.569		1.319	0.187		-0.704	0.483
5 year after merger	-0.335		0.419	0.675		-0.387	0.700
Overall interest spread							
1 year after merger	0.201		0.932	0.352		0.850	0.850
3 year after merger	0.387		1.482	0.138		-0.704	0.483
5 year after merger	0.472		1.340	0.180		0.750	0.456

***, **, * indicates that the difference in means is different from zero at significant level of 1%, 5%, and 10%, respectively.

Table 3-2. Test Results on efficiency in terms of cost reduction

Cost to income ratio							
1 year after merger	-0.099		0.469	0.639	**	-2.541	0.013
3 year after merger	-0.098		1.894	0.058	**	-2.564	0.012
5 year after merger	-0.098	**	2.456	0.014	**	-2.387	0.020
Personnel expense to income							
1 year after merger	-0.072		0.269	0.788	***	-2.828	0.006
3 year after merger	-0.071		2.032	0.042	***	-2.825	0.006
5 year after merger	-0.070		1.786	0.074	**	-2.569	0.012
Cost of equipment to income							
1 year after merger	-0.026		0.744	0.457	*	-1.879	0.064
3 year after merger	-0.025		0.882	0.378	*	-1.888	0.063
5 year after merger	-0.026	***	3.126	0.002	*	-1.874	0.065

***, **, * indicates that the difference in means is different from zero at significant level of 1%, 5%, and 10%, respectively.

Table 3-3. Test Results on soundness

Capital adequacy ratio							
1 year after merger	-0.016		1.344	0.179	***	-3.314	0.001
3 year after merger	-0.014		1.382	0.167	***	-2.912	0.005
5 year after merger	-0.009		0.209	0.834	*	-1.768	0.081
Loans to deposits ratio							
1 year after merger	-0.100		0.531	0.595	**	-2.439	0.017
3 year after merger	-0.091		0.869	0.385	**	-2.252	0.027
5 year after merger	-0.093		0.321	0.748	**	-2.184	0.032
ln (total assets)							
1 year after merger	0.458	***	5.483	0.000	***	28.458	0.000
3 year after merger	0.415	***	4.533	0.000	**	-2.034	0.045
5 year after merger	0.395	***	3.782	0.000	**	-2.116	0.038

***, **, * indicates that the difference in means is different from zero at significant level of 1%, 5%, and 10%, respectively.

Table 4-1 Profitability

		All merging banks		sample excluding banks with financial asistance	
ROA	5 year before merger	-0.46		-0.30	
		(0.55)		(0.58)	
	4 year before merger	-0.95	***	-0.79	
		(0.55)		(0.57)	
	3 year before merger	-0.46		-0.23	
		(0.55)		(0.57)	
	2 year before merger	-0.35		-0.10	
		(0.55)		(0.57)	
	1 year before merger	0.29		0.54	
		(0.55)		(0.57)	
	the year of merger	-1.04	*	-0.93	
		(0.55)		(0.58)	
	1 year after merger	-1.06	*	-0.87	
		(0.55)		(0.58)	
	2 year after merger	-1.14	**	-1.16	**
		(0.56)		(0.58)	
	3 year after merger	0.38		0.42	
		(0.56)		(0.58)	
	4 year after merger	0.66		0.86	
		(0.57)		(0.59)	
	5 year after merger	0.49		0.61	
		(0.57)		(0.60)	

Net business income ／ Total assets	5 year before merger	-0.49		-0.38	
		(0.63)		(0.65)	
	4 year before merger	-1.14	*	-1.02	
		(0.62)		(0.65)	
	3 year before merger	-0.51		-0.28	
		(0.62)		(0.65)	
	2 year before merger	-0.10		0.25	
		(0.62)		(0.65)	
	1 year before merger	0.51		0.79	
		(0.62)		(0.65)	
	the year of merger	-1.03	*	-0.82	
		(0.65)		(0.62)	
	1 year after merger	-1.10	*	-0.97	
		(0.62)		(0.65)	
	2 year after merger	-0.97	*	-0.96	
		(0.63)		(0.66)	
	3 year after merger	0.35		0.36	
		(0.63)		(0.66)	
	4 year after merger	0.28		0.44	
		(0.63)		(0.66)	
	5 year after merger	0.59		0.70	
		(0.64)		(0.67)	
Loans to deposits spread	5 year before merger	-0.23		-0.19	
		(0.85)		(0.89)	
	4 year before merger	0.05		0.17	
		(0.84)		(0.88)	
	3 year before merger	0.20		0.31	
		(0.84)		(0.88)	
	2 year before merger	0.34		0.49	
		(0.84)		(0.88)	
	1 year before merger	0.33		0.44	
		(0.84)		(0.88)	
	the year of merger	-3.78	***	-3.70	***
		(0.84)		(0.88)	
	1 year after merger	0.67		0.85	
		(0.84)		(0.88)	
	2 year after merger	0.71		0.87	
		(0.85)		(0.89)	
	3 year after merger	0.85		0.88	
		(0.85)		(0.89)	
	4 year after merger	0.91		1.01	
		(0.85)		(0.89)	
	5 year after merger	1.47		1.50	
		(0.87)		(0.91)	

Overall interest spread	5 year before merger	-0.44	-0.49
		(0.76)	(0.790)
	5 year before merger	-0.61	-0.52
		(0.75)	(0.783)
	5 year before merger	-0.22	-0.04
		(0.75)	(0.784)
	5 year before merger	0.10	0.32
		(0.75)	(0.785)
	5 year before merger	0.26	0.39
		(0.75)	0.785)
	the year of merger	-0.34	-0.21
		(0.75)	(0.785)
	1 year after merger	0.49	0.64
		(0.75)	(0.785)
	2 year after merger	0.65	0.78
		(0.76)	(0.795)
	3 year after merger	0.93	1.02
		(0.76)	(0.795)
	4 year after merger	1.05	1.19
		(0.76)	(0.794)
	5 year after merger	1.05	1.12
		(0.78)	(0.814)
sample		1989-2008	1989-2008
Periods included		20	20
Cross-sections included		200	197
Total panel (unbalanced) observations		3984	3940

Hereafter, *、**、*** indicate that the coefficient is different from zero at significant level of 1%, 5%, 10%, respectively.

Table 4-2 Efficiency in terms of cost reduction

		All merging banks		sample excluding banks with financial asistance	
Cost to income ratio	5 year before merger	0.01	*	0.014	*
		(0.0)		(0.008)	
	5 year before merger	0.02	***	0.019	***
		(0.01)		(0.008)	
	4 year before merger	0.01		0.010	
		(0.01)		(0.008)	
	3 year before merger	0.00		0.003	
		(0.01)		(0.008)	
	2 year before merger	0.00		0.001	
		(0.01)		(0.008)	
	the year of merger	0.00		-0.004	
		(0.01)		(0.008)	
	1 year after merger	-0.01		-0.013	*
		(0.01)		(0.008)	
	2 year after merger	-0.01		-0.012	
		(0.01)		(0.008)	
	3 year after merger	-0.02	**	-0.018	**
		(0.01)		(0.008)	
	4 year after merger	-0.02	***	-0.024	***
		(0.01)		(0.008)	
	5 year after merger	-0.02	**	-0.017	**
		(0.01)		(0.008)	

Personnel expense to income ratio (%)	5 year before merger	1.076	*	1.136	**
		(0.548)		(0.574)	
	4 year before merger	1.306	**	1.309	**
		(0.544)		(0.568)	
	3 year before merger	0.610		0.557	
		(0.544)		(0.569)	
	2 year before merger	0.013		-0.081	
		(0.545)		0.569	
	1 year before merger	-0.306		-0.316	
		(0.545)		(0.570)	
	the year of merger	-1.115	**	-1.228	**
		(0.545)		(0.570)	
	1 year after merger	-1.883	***	-2.052	***
		(0.545)		(0.570)	
	2 year after merger	-1.767	***	-1.987	***
		(0.552)		(0.577)	
	3 year after merger	-2.249	***	-2.344	***
		(0.551)		(0.577)	
	4 year after merger	-2.441	***	-2.627	***
		(0.550)		(0.576)	
	5 year after merger	-2.130	***	-2.202	***
		(0.563)		(0.590)	
Cost of equipment to income ratio (%)	5 year before merger	0.296		0.309	
		(1.274)		(0.309)	
	4 year before merger	0.294	**	0.654	**
		(2.526)		(0.306)	
	3 year before merger	0.294	**	0.514	*
		(2.018)		(0.306)	
	2 year before merger	0.294		0.422	
		(1.567)		(0.307)	
	1 year before merger	0.294		0.496	
		(1.650)		(0.307)	
	the year of merger	0.294	***	0.985	***
		(3.354)		(0.307)	
	1 year after merger	0.294	***	0.784	**
		(2.808)		(0.307)	
	2 year after merger	0.298	***	0.856	***
		(3.139)		0.311	
	3 year after merger	0.298	**	0.640	**
		(2.272)		(0.311)	
	4 year after merger	0.297	*	0.367	
		(1.703)		(0.310)	
	5 year after merger	0.304	**	0.608	*
		(2.129)		(0.318)	

Table 4-3 Soundness

		All merging banks		sample excluding banks with financial asistance	
Capital adequacy ratio	5 year before merger	-0.145	**	-0.174	**
		(0.058)		(0.060)	
	4 year before merger	-0.137	**	-0.160	**
		(0.057)		(0.060)	
	3 year before merger	-0.098	*	-0.118	**
		(0.057)		(0.060)	
	2 year before merger	-0.096	*	-0.109	*
		(0.057)	(0.060)		
	1 year before merger	-0.120	**	-0.143	**
		(0.057)		(0.060)	
	the year of merger	-1.196	***	-1.255	***
		(0.057)		(0.060)	
	1 year after merger	-0.082	-0.096		
		(0.057)	(0.060)		
	2 year after merger	-0.111	*	-0.106	*
		(0.058)		(0.061)	
	3 year after merger	-0.075		-0.090	
		(0.058)		(0.061)	
	4 year after merger	-0.067		-0.065	
		(0.058)		(0.060)	
	5 year after merger	-0.063		-0.077	
		(0.059)		(0.062)	
Loans to deposits ratio	5 year before merger	-0.149		-0.166	
		(0.160)		(0.168)	
	4 year before merger	-0.157		-0.174	
		(0.159)		(0.166)	
	3 year before merger	-0.160		-0.177	
		(0.159)		(0.166)	
	2 year before merger	-0.158		-0.173	
		(0.159)		(0.166)	
	1 year before merger	-0.163		-0.178	
		(0.159)		(0.166)	
	the year of merger	-0.176		-0.192	
		(0.159)		(0.166)	
	1 year after merger	-0.182		-0.200	
		(0.159)		(0.166)	
	2 year after merger	-0.174		-0.191	
		(0.161)		(0.169)	
	3 year after merger	-0.171		-0.186	
		(0.161)		(0.168)	
	4 year after merger	-0.191		-0.207	
		(0.161)		(0.168)	
	5 year after merger	-0.255		-0.278	
		(0.164)		(0.172)	

Table 4-4 Scale e.t.c.

		All merging banks		sample excluding banks with financial asistance	
ln (total assets)	5 year before merger	-0.02		-0.01	
		(0.019)		(0.020)	
	4 year before merger	-0.03		-0.03	
		(0.019)		(0.020)	
	3 year before merger	-0.05	**	-0.04	**
		(0.019)		(0.020)	
	2 year before merger	-0.05	**	-0.04	**
		(0.019)		(0.020)	
	1 year before merger	-0.04	**	-0.03	
		(0.019)		(0.020)	
	the year of merger	0.36	***	0.38	***
		(0.019)		(0.020)	
	1 year after merger	0.34	***	0.36	***
		(0.019)		(0.020)	
’	2 year after merger	0.32	***	0.34	***
		(0.020)		(0.020)	
	3 year after merger	0.30	***	0.33	***
		(0.020)		(0.020)	
	4 year after merger	0.29	***	0.31	***
		(0.019)		(0.020)	
	5 year after merger	0.24	***	0.26	***
		(0.020)		(0.021)	

Loans ／ total assets	5 year before merger	0.00		0.00	
		(0.007)		(0.008)	
	4 year before merger	-0.01		-0.01	
		(0.007)		(0.008)	
	3 year before merger	-0.01		-0.01	
		(0.007)		(0.008)	
	2 year before merger	0.00		0.00	
		(0.007)		(0.008)	
	1 year before merger	0.00		0.00	
		(0.007)		(0.008)	
	year after merger	-0.01		-0.01	
		(0.007)		(0.008)	
	1 year after merger	-0.01		-0.01	
		(0.007)		(0.008)	
	2 year after merger	-0.01		-0.01	
		(0.007)		(0.008)	
	3 year after merger	-0.01		0.00	
		(0.007)		(0.008)	
	4 year after merger	-0.01		0.00	
		(0.007)		(0.008)	
	5 year after merger	0.00		0.01	
		(0.008)		(0.008)	
Deposits ／ total assets	5 year before merger	-0.02	***	-0.03	***
		(0.006)		(0.006)	
	4 year before merger	-0.02	***	-0.02	***
		(0.005)		(0.006)	
	3 year before merger	-0.02	***	-0.02	***
		(0.005)		(0.006)	
	2 year before merger	-0.02	***	-0.02	***
		(0.005)		(0.006)	
	1 year before merger	-0.02	**	-0.02	***
		(0.005)		(0.006)	
	year after merger	-0.01	*	-0.01	**
		(0.005)		(0.006)	
	1 year after merger	-0.01		-0.01	*
		(0.005)		(0.006)	
	2 year after merger	0.01		0.01	
		(0.006)		(0.006)	
	3 year after merger	0.01		0.01	
		(0.006)		(0.006)	
	4 year after merger	0.01		0.00	
		(0.006)		(0.006)	
	5 year after merger	0.01		0.00	
		(0.006)		(0.006)	

Appendix A: Characteristics of Shinkin banks' mergers

There are three types of Shinkin banks analyzed in the paper; The first type is "the surviving bank" which merges with another Shinkin bank once in the sample period and whose financial code exists after the merger; secondly "the absorbed bank" that has been consumed by a surviving one and lost its financial code, and thirdly "the control bank" that has not been related to any merger activities in the same region and during the sample period. The merger types examined in the paper are simple merger cases, different from the mostly complex Shinkin merger activities of Shinkin banks as described below, compared to mergers of other financial institutions. Since it is difficult to examine the consequences of a consolidation when a financial institution keeps merging with other financial institutions in a short period of time, complicated merger activities are not included in our analysis.

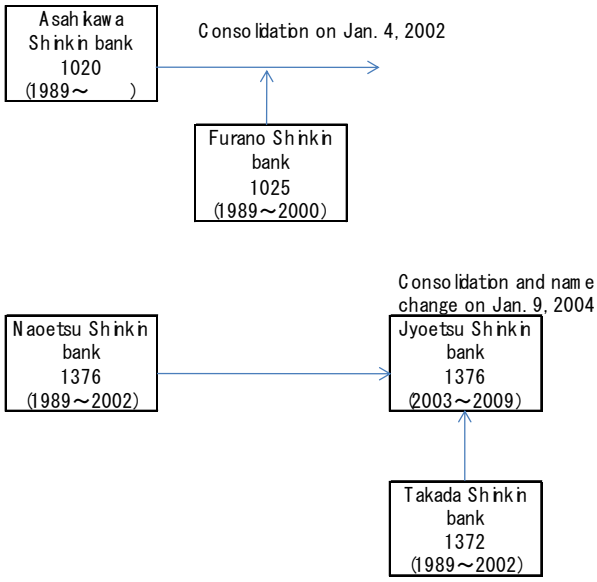
Characteristics of Shinkin bank mergers are broken down into five patterns and distinctive cases are explained in depth in this appendix. The five patterns are; 1) Simple merger cases (examined in the paper), 2) Sequential merger cases (a Shinkin bank repeatedly merging with other Shinkin banks), 3) Complex merger cases (merging and being merged repeatedly in a case), 4) Merger cases where other type of financial institutions are involved (credit unions are sometimes included), and 5) Others (Shinkin banks set to be dissolved or business transferred are in this category).

A Shinkin bank whose financial code is maintained is a surviving bank in the paper as names of banks are easily changed especially when they are involved in a merger. Some Shinkin banks changed their name when they merged with another Shinkin bank. Some Shinkin banks' name utilizing Chinese characters changed into the same name utilizing Japanese phonetic characters. Focusing on financial codes rather than Shinkin banks' name is easier to keep track of what is going on in a structural change.

1) Simple merger cases (examined in the paper)

Adjacent Shinkin banks' mergers that are taking place in the same prefecture are likely to be classified in this pattern. Asahikawa Shinkin bank merged with the adjacent Furano Shinkin bank on January 2002 and now exists as Asahikawa Shinkin bank. Another example is Naoetsu Shinkin bank. The bank located in Joestu region in Niigata prefecture changed its name when it merged with

Takada Shinkin bank on January 2004　Both banks are located in the Joestu region and the new bank name became Joetsu Shinkin bank.



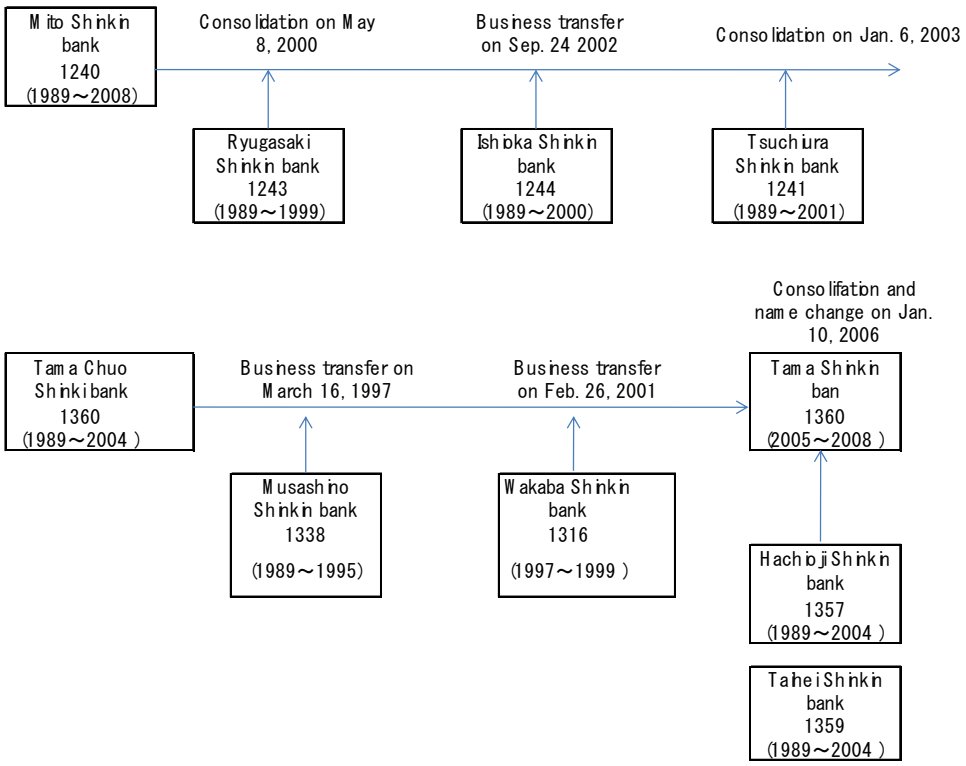
2) Sequential merger cases (Shinkin bank repeatedly merging with other Shinkin banks)

Mito Shinkin bank sequentially merged with several Shinkin banks. It merged with Ryugasaki Shinkin bank on May 2000, Ishioka Shinkin bank on September 2002, Tsuchiura Shinkin bank a half year later of the second merger, and then now exists as Mito Shinkin bank. Cases such as Mito Shinkin banks are excluded from our analysis as it is believed that it takes some years to see the effect of management improvement after a merger. In the Mito Shinkin bank case, both Ryugasaki Shinkin bank and Ishioka Shinkin bank are identified as a failed institution with excess liabilities by DICJ.

Ryugasaki Shinkin bank (Location: Ryugasaki-city, Ibaraki prefecture, DICJ file number 73) gave loans to real estate and construction companies and applied for bankruptcy to the FSA when the loan turned into non-performing assets after the 'bubble economy'. The performance of Ishioka Shinkin bank (Location: Ishioka-city, Ibaraki prefecture, DICJ file number 172) faced a similar situation and the FSA identified the banks as a failed institution with excess liabilities as the bank's capital adequacy ratio turned into negative 4.9%. Mito Shinkin bank received financial assistance from DICJ as an assuming financial institution. The amount was 18.7 billion yen for Ryugasaki Shinkin bank and 35.6 billion yen for the case of Ishioka Shinkin bank.

The financial assistance method is one of the two methods for protection and resolution of failed financial institutions. The insurance payment method is the second method, whereby payments are made to depositors, whereas in the financial assistance method, financial assistance is provided to an assuming financial institution. In order to minimize any disorder, priority is given to the financial assistance method. As anoperation related to failure resolution, the DICJ implemented purchased assets worth 12.4 billion yen from Ryugasaki Shinkin bank and purchased assets worth 17.3 billion yen from Ishioka Shinkin bank as asset purchase.

Tama Chuo Shinkin bank also sequentially merged with some Shinkin banks and changed its name to Tama Shinkin bank when they merged with Hachioji Shinkin bank. Musashino Shinkin bank's business was transferred to five Shinkin banks in Tokyo when the bank failed (Tama Chuo Shinkin bank is one of the five). Wakaba Shinkin bank announced its bankruptcy in April 2000 and the business was transferred to eight Shinkin banks in 2001 (Tama Chuo Shinkin bank is one of the eight).

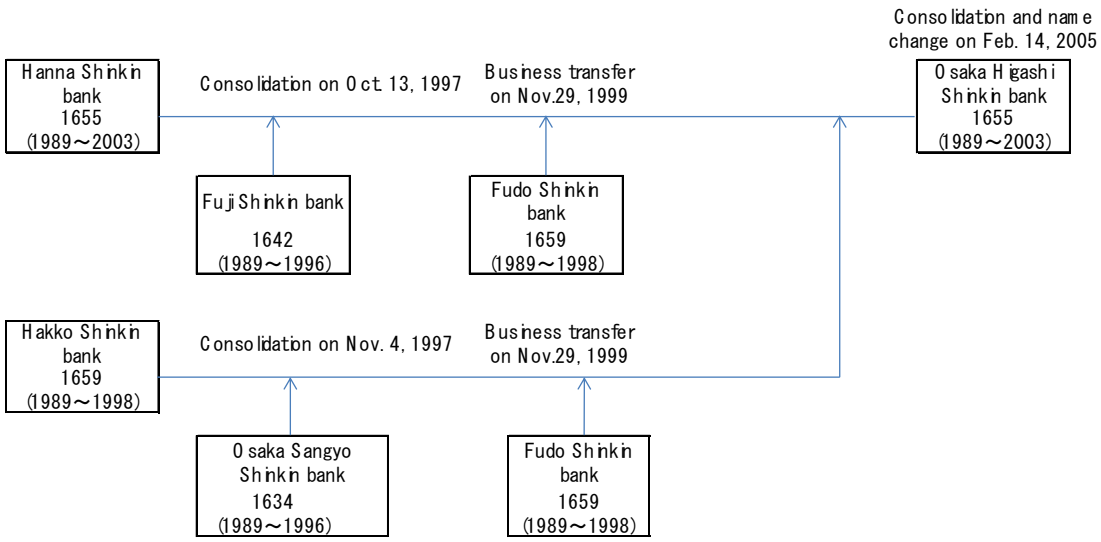


3) Complex merger cases (merging and being merged repeatedly in a case)

Hanna Shinkin bank located in Higashi Osaka city in Osaka prefecture merged with Fuji Shinkin bank located in Osaka city in October 1997, then merged with Fudo Shinkin bank about two years later in November 1999. Bankrupted Fudo Shinkin bank was liquidated after transferring its business to eight Shinkin banks in Osaka. Hakko Shinkin bank received a part of Fudo Shinkin bank's business after merging with Osaka Sangyo Shinkin bank but was later merged by Hanna Shinkin bank. Hanna Shinkin bank changed its name to Osaka Higashi Shinkin bank when it merged with Hakko Shinkin bank. The same bank name appears several times in this consolidation structure.

Hanna Shinkin bank is now Osaka City bank after choosing an equal merger with Osaka City Shinkin bank and Daifuku Shinkin bank in 2013, out of our sample period.

There are many other complex merger cases in the Shinkin bank industry. Another case of a consolidation structure in Aomori prefecture is a good example that shows the meaning of an existing financial code rather than the name of a financial institution.

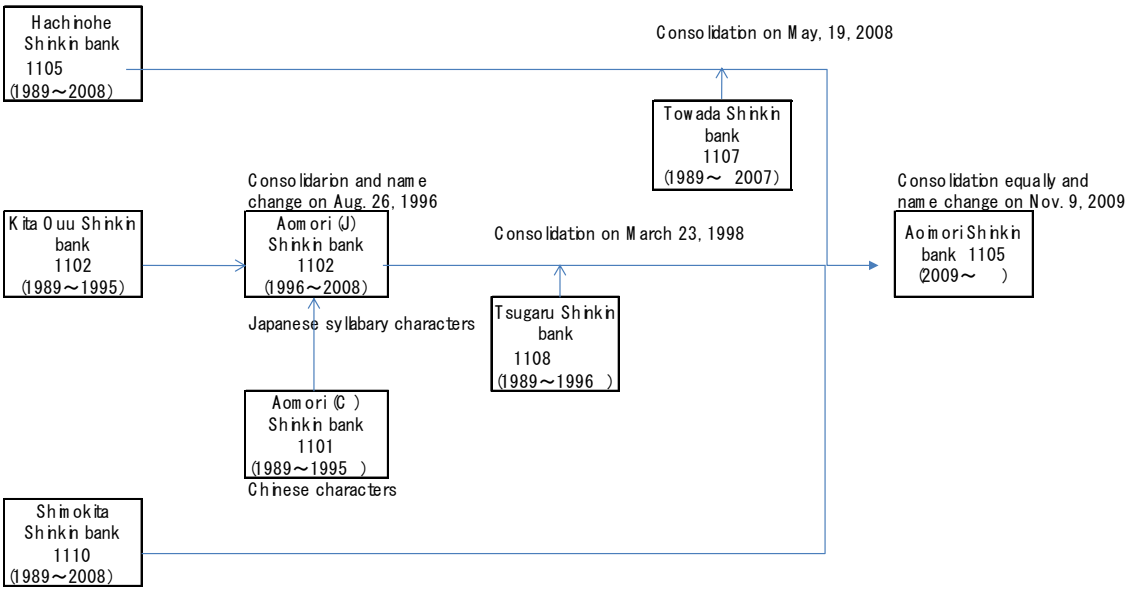


Aoimori Shinkin bank, whose financial code is 1105 (Location: Hachinohe city, Aomori prefecture) merged with Aomori (written in Chinese character) Shinkin bank, Aomori (written in Japanese syllabary characters) Shinkin bank and so on.

Kita Ouu Shinkin bank merged with Aomori (Chinese character) Shinkin bank and changed its name as Aomori (Japanese syllabary characters) Shinkin bank in 1996. Kita Ouu Shinkin

bank received financial assistan since Aomori (Chinese character) Shinkin bank was a failed bank. The newly born Aomori (Japanese syllabary characters) Shinkin bank had difficulty in operating business years later after merging with Tsugaru Shinkin bank in 1998. Hachinohe Shinkin bank offered a relief merger so Aomori (Japanese syllabary characters) Shin bank was merged by Hachinohe Shinkin bank in 2009. Two other Shinkin banks joined in the merger and the new bank name was changed to Aoimori, not Aomori, Shinkin bank and kept its existing financial code 1105. Aoimori Shinkin bank is one of the biggest Shinkin banks in the Tohoku region and its business area covers the entire Aomori prefecture.

There are other similar cases which can be studied on the internet. .[1]

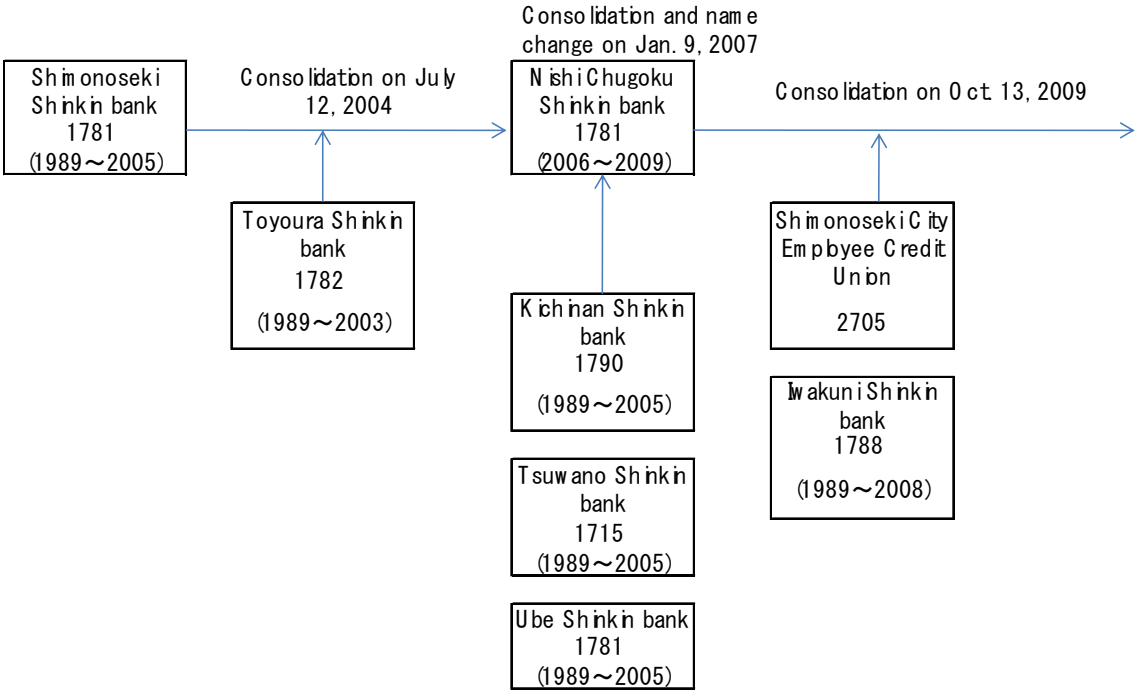


4) Merger cases where other type of financial institutions are involved (credit unions are sometimes included)

Credit unions are sometimes merged by Shinkin banks. Shimonoseki Shinkin bank merged with Toyoura Shinkin bank in 2004 and changed its name to Nishi Chugoku Shinkin bank when the bank merged with three Shinkin banks in Yamaguchi prefecture in 2007. When Nishi Chugoku Shinkin bank merged with another Shinkin bank in 2009, the bank merged with the Shimonoseki City

[1] All of the structural changes in the Shinkin bank industry, which is not provided even in Japanese, will be available in the following website.
http://c-faculty.chuo-u.ac.jp/~kimieh/index_j10.html

Employee Credit Union at the same time. The surviving financial code is 1781 and existing bank is Nishi Chugoku Shinkin bank but it can be said that all three financial institutions were equally merged.



5) Others (Shinkin banks set to be dissolved or transferred businesses are in this category).

Other type of organizational restructuring includes business transfer of a failed Shinkin bank and shift to an ordinary bank.

Utsunomiya Shinkin bank (Location: Utsunomiya city, Tochigi prefecture), after giving up the idea of self-resuscitation, offered for financial assistance to DICJ and its business transferred to five Shinkin banks in the Tochigi prefecture. It can be treated as five simple merger cases, but this case is not included in our sample and categorized into "5) Others" as Utsunomiya Shinkin bank is a bankrupted bank. The Shinkin bank failed due to factors including falling land prices, increasing non-performing loans and more.

Kamaishi Shinkin bank's (Location: Kamaishi city, Iwate prefecture) received financial assistance several times from DICJ but eventually filed for bankruptcy and its business was transferred to ordinary banks and Shinkin banks as well. One reason for the failure was the closure of Shin Nippon Steel Ironworks. Borrowers faced troubles due to the closure, and this brought

managerial difficulties to the Shinkin bank. Kamaishi Shinkin bank announced its failure in May, 1993.

Yachiyo Shinkin bank (Location: Shinjuku, Tokyo) switched from Shinkin bank to Ordinary bank in April, 1991. The bank started as a credit union in the middle of World War II, and later changed into Shinkin bank. The Shinkin bank increased its scale of business by merging with other financial institutions and became a second regional bank. Yachiyo Shinkin bank is the only bank which turned into an ordinary bank. The bank was listed on the first section of the Tokyo Stock Exchange in 2007, and was established as a financial holding company, the Tokyo TY Financial Group (its head office is in Yachiyo bank). The group acquired ownership of Shin Ginko Tokyo (Location: Shunkuku, Tokyo) in April, 2016.