PRE- AND POST-MERGER PERFORMANCES OF SHINKIN BANKS IN JAPAN

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Abstract

The purpose of this paper is to describe the performances and consequences of Cooperative (Shinkin) bank merger activities that took place from 1994 through 2003 in Japan. Not only were there a large number of mergers, but these bank mergers were complicated during the sample period compared to another type of banking institutions. Banks are classified into three groups; "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 such as profitability, soundness and efficiency, related to these three classes are analyzed by the difference-in-difference method and panel estimation. Profitability of the surviving banks plummeted immediately after a merger, only to find it improving after a few years. The efficiency of surviving banks improved in terms of cost reduction, especially by reducing labor cost. Soundness of surviving banks which was lower than that of control banks became 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 banks could be an effective measure as a strategy to exist.

Keywords: Bank Mergers, Profitability, Soundness, Efficiency, Japan

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1. INTRODUCTION

Shinkin banks are cooperative regional financial institutions serving small and medium-sized companies and local residents with the objective set by the Shinkin Bank Act in Japan. Their membership comprises local residents and small and medium-sized enterprises. Shinkin banks' distinctive characteristic is that they have a strong relationship of mutual trust with their customers and communities. Companies with over 300 employees, however, are prohibited from membership. Shinkin banks limit their lending, in principle, to members. However, their functions are almost the same as those of commercial banks, and they also deal with many people who are not members, accepting deposits, providing exchange services, accepting payments, including those for public utilities, and engaging in over-the-counter sales of public bonds, investment trust funds, and insurance.

This paper examines the effects of consolidations among Shinkin banks, which are deposit-taking cooperatives of small businesses 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, it is 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) point 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) report 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) focus on examining simple merger cases after classifying all cases into five categories, due to the complexity of Shinkin bank mergers (Appendix A shows some Shinkin bank merger cases).

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 the background and history of Shinkin banks and related literature are surveyed in Section 3. Section 4 describes our data set and methodology used in the analysis. Section 5 shows the estimation results of performances and consequences of Shinkin bank merger activities. Section 6 concludes.

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.

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) is another type of deposit-taking regional financial institutions specializing in small and medium enterprises, which accepts deposits only from members.

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 could 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 by 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 number 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 Bank 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 from 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. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Mergers among financial institutions increased from the late 1990s to the early 2000s after banks in Japan suffered from a tremendous amount of non-performing loans. Merger activities seemed to have calmed down as the number of mergers suddenly declined soon after 2000, 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 effects and consequences of mergers among Japanese regional financial institutions. Regional banks' mergers are examined but there are only a few for Shinkin banks because the organizational structure and purpose for the establishment of Shinkin banks are quite different from other types of regional banks, as explained in the previous section, and Shinkin banks' merger activities were complicated.

Berger et al. (1999) explain that there are two motives for bank mergers. The first motive is to maximize the value of shares. As Berger et al. (1999) point 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 this approach for Shinkin banks, however, it is not appropriate as Shinkin banks are not corporations like private banks or limited companies. They are membership organizations and cooperatives of small businesses and 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. Stocks of Shinkin banks are not traded at stock exchanges. Shinkin banks do not have the incentive for maximizing its value since their lending outside operational area is limited by the law. The methodology used in Berger et al. (1999) is not applicable for Shinkin banks as the financial statement is the only available data for analyzing Shinkin banks.

Hoshino (1992) examines the effect of consolidation by analyzing 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 to 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 consolidations and that the worst Shinkin banks were consolidated ones. This means that merged Shinkin banks had heavy financial burdens. The findings led to a negative conclusion that consolidation decreased profitability and loan-to-deposit ratio of merged Shinkin banks compared to those that were not involved.

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 prefectures. There are a couple of studies that compare changes in the 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 explained in the paper). Inoue (2003) 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 of a merger would be limited. Sakai, Tsuru and Hosono (2009) examines not only efficiency, profitability (ROA), and soundness (capital ratio and non-performing loan ratio), but also investigates the effects of consolidations among Shinkin banks as well. Their findings show that merged Shinkin banks are less profitable, worse in cost efficiency and have inferior soundness compared to surviving Shinkin banks. The hypothesis in their 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

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

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, the surviving bank is called as "the merger", the absorbed bank as "the absorbed" and the control bank as "the control".

Area matching is also taken into consideration as it is the distinctive characteristics of Shinkin banks. Shinkin banks are regulated their lending activities by law, in principle, to members, which comprise local residents and small and medium-sized enterprises within a region (http://www.shinkin-central-bank.jp/e/financial/ index.html#fi04 (accessed 31 July 2018)). Yamamoto (2011) and Horie (2015) point out the importance of area matching to assess the regional banks' performances.

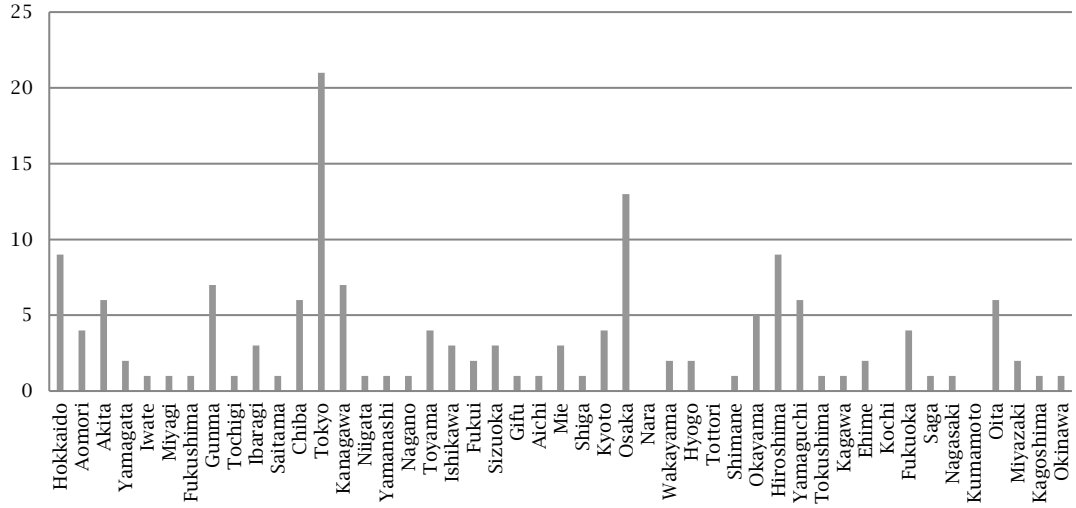
In order to evaluate the pre- and post-merger performances of Shinkin banks, sample banks whose financial statement data are available for the year of a merger and every 5 years before and after the merger year have been chosen. Due to the selection process, the number of banks dropped as Shinkin banks' merger activities were very complicated (see http://c-faculty.chuo-u.ac.jp/blog/kimieh/files/2017/05/Shinkin-E-elimination-and-consolidation.pdf (accessed 31 July 2018) for all merger cases.). The greater part of mergers was pair mergers involving two banks at a time, but sometimes three or more banks were involved. In the following, this study will focus only on pair mergers that are hereinafter referred to as "simple" mergers. Table 2 shows the sample size of mergers. Figures 1 and 2 present the number of mergers by prefecture and year, respectively.

Table 2. Sample by prefecture/area

		Mergers (the surviving banks)	*Absorbed banks*	*Control banks (non-related to any merger activities)*		*Mergers (the surviving banks)*	*Absorbed banks*	*Control banks (non-related 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/ Chugoku	4	4	10
32	Shimane	1	1	1				
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

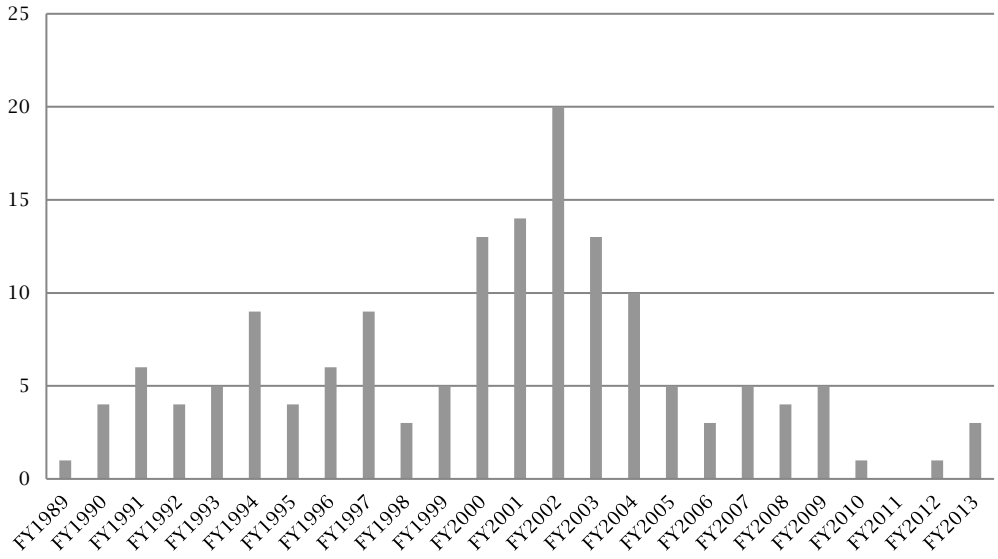
Source: History of Shinkin Banks' mergers (Shinyokinko gappei no rekishi) from The National Association of Shinkin Banks Web site; http://www.shinkin.org/shinkin/history/index.html (accessed 31 July 2018)

Figure 1. The number of merger activities by prefecture, 1989-2013



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 (accessed 31 July 2018)

Figure 2. The number of merger activities by year, 1989-2013



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 (accessed 31 July 2018)

In the analysis, the standard balance sheet ratios are used to estimate the pre- and post-merger performances of Shinkin Banks. 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 measures for its efficiency in 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. Table 3 shows the details of these variables.

4.2. The post-merger performances of Shinkin banks

Before estimating the influence of mergers on managerial performances of Shinkin banks, following data are briefly examined; key balance sheet indicators, profitability, soundness and efficiency, over an 11-year period including 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). The year of mergers is denoted as period t and every 5 years before and after the period t as period $t+i$, (i = -5, -4, …, 0, 1, …, 5), respectively.

Table 3. List of variables

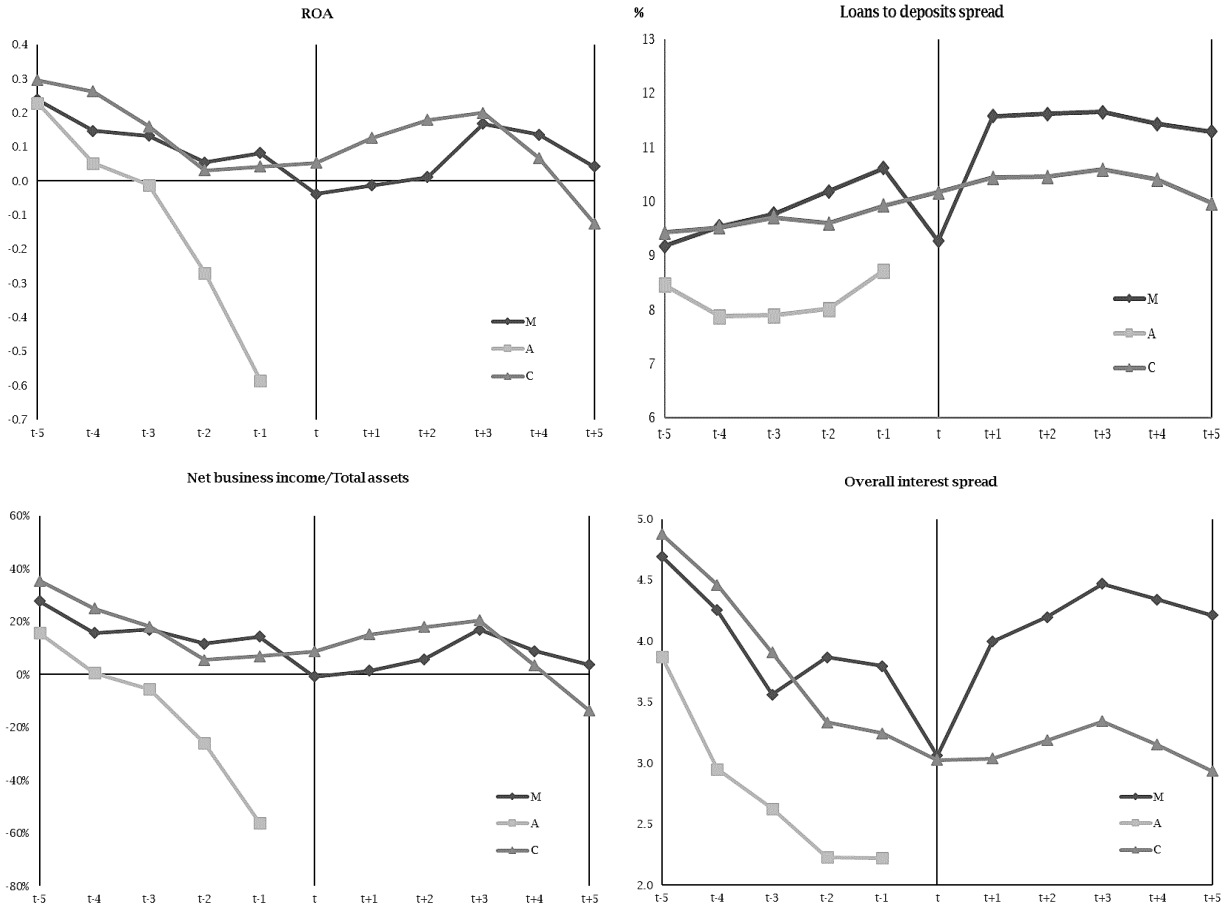
ROA	Net income (total pro t after value adjusted)/total assets
Gross Profits	Operating income - Operating Expense
Operating income	Interest income + Fees and commissions + other operating income
Operating cost	Interest expense + Fee and commissions + other operating expenses
Net Business Income	Gross 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

4.2.1. Profitability

Figures 3-1 to 3-3 demonstrate a long-term effect of pre- and post-mergers on key balance sheet indicators. 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% at period 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 at period *t* and the following 4 years but dropped at period *t+5*. While profitability of the merger temporally becomes negative at period *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. During years after merger year *t*, the profitability of the merger becomes lower than the controls, which suggests that there are some merger effects on profitability.

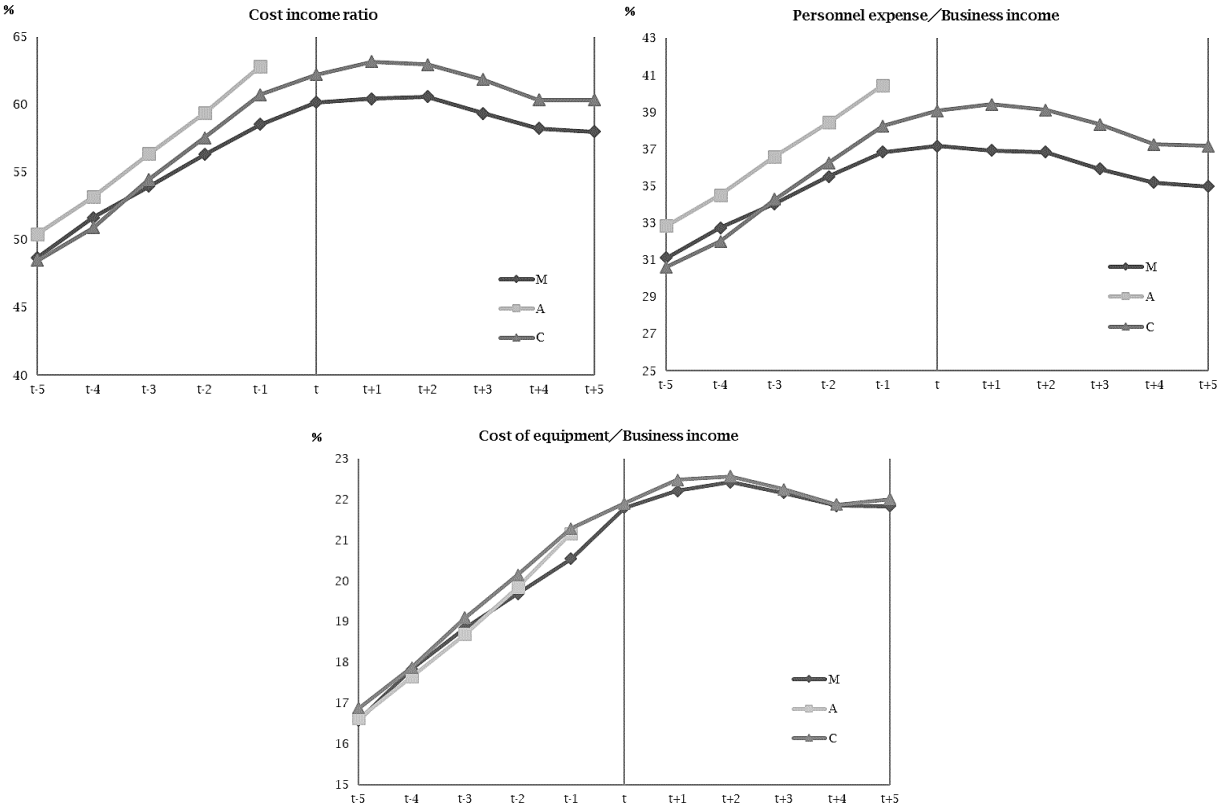
Figure 3-1. Profitability



4.2.2. 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 lower most times. The cost income ratio of the merger especially dropped soon after the merger-year *t*. This pattern can clearly be seen in the personnel expense to income ratio and not in the cost of equipment income ratios. These results suggest that mergers may improve cost efficiency through attrition.

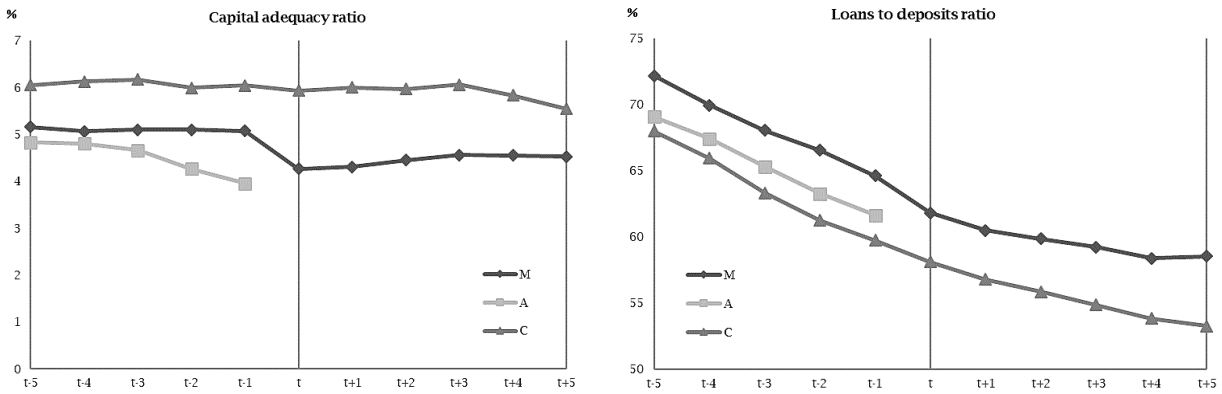
Figure 3-2. Cost income ratio



4.2.3. 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 are the lowest of all throughout the sample periods. CAR of the absorber is the lowest among banks and steadily declines from period t-5 to t-1. The absorbed tends to be under-performing and unhealthy. CAR of the merger seems to deteriorate as a result of the merger. It slightly increases after the merger but does 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 banks' soundness.

Figure 3-3. Soundness



5. EVALUATING INFLUENCES AND DISCUSSIONS OF MERGER ACTIVITIES

5.1. Consequences of mergers

Influences of a merger are examined by comparing pre- and post-merger periods' data with controlling trends in banks' operating regional area and merger activities of Shinkin banks are discussed.

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 a merger. Similarly, X^C_{t-l} 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 $(X_{t-l} - X^C_{t-l})$ for each l is an estimated pre-merger variable X and is denoted by $\hat{X}_{t-l}$. Then a simple average over l is taken,

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

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^C_{t+l} in the same manner as the pre-merger value. We then take a difference of $\hat{X}_{pre}$ and X^C_{t+l} 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:

5.1.1. Profitability

Table 4-1 shows the differences of profitability variables between average pre-merger period and selected post-merger periods, namely 1, 3 and 5 years after merger periods. Net business income (as a portion of total assets) and ROA significantly recovered from within 5 years after merger. 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 merger. Overall interest spread did not show significant increase throughout the post-merger periods.

Table 4-1. Test results on profitability

	The difference in means	***Wilcoxon signed rank test***		***t test***	
		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

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

5.1.2. Efficiency (in terms of cost reduction)

The cost to income ratio as an indicator of efficiency is shown in Table 4-2. It significantly decreases immediately after the merger. The cost ratio was decomposed into two major components: expense and cost of equipment to income ratios, respectively, then found that personnel expense ratio significantly decreases. The results show that mergers contribute to cost reduction, especially in the personnel cost.

Table 4-2. Test results on efficiency in terms of cost reduction

	The difference in means	***Wilcoxon signed rank test***		***t test***	
		Z-value	***P-value***	***t-value***	***P-value***
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

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

5.1.3. Soundness

From Table 4-3, it is observed that CAR and loans to deposits ratios dropped soon after the merger, the results correspond to what is found in Figure 3-3. While CAR steadily recovered between 1 year and 5 year post-merger periods, loans to deposits ratios continued to decrease. Table 4-3 suggests that mergers, to some extent, strengthen the soundness of Shinkin banks, which presents a contrast to the result in Table 4-3.

Table 4-3. Test results on the soundness

	The difference in means	***Wilcoxon signed rank test***		***t test***	
		Z-value	***P-value***	***t-value***	***P-value***
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

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

5.2 Panel data analysis

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

$$Y_{it} = \alpha_0 + \sum_{l=-5}^{5} \beta_l MYD_i(l) + YD_t + u_i + \varepsilon_{it}, \qquad (2)$$

where Y_{it} is Shinkin bank's characteristic variable, α_0 is a constant, YD_t (t = 1990, 1991, ⋯ 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, $l = \mathrm{t}-5, \cdots, \mathrm{t}-1, \mathrm{t}, \mathrm{t}+1, \cdots, \mathrm{t}+5$). From the above equation, effects 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, as undertaking actions such as business transfers and mergers. Although Shinkin banks have received no government recapitalization until 2006, the Deposit insurance corporation of Japan provided financial assistance to those Shinkin banks that merge failed Shinkin banks between 1999 and 2002. In order to take into account the effect of the financial support on their performances, additionally, the sample excluding three cases where financial supports are provided in the face of a merger is also conducted. Estimation results are shown below.

5.2.1. Profitability

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

Table 5-1. Profitability (Part I)

		All sample	***Sample excluding three cases***
ROA	t-5	-0.457 (0.553)	-0.300 (0.579)
	t-4	-0.949* (0.548)	-0.790 (0.573)
	t-3	-0.456 (0.549)	-0.228 (0.574)
	t-2	-0.353 (0.550)	-0.096 (0.575)
	t-1	0.294 (0.550)	0.539 (0.575)
	t	-1.036* (0.550)	-0.929 (0.575)
	t+1	-1.057* (0.550)	-0.867 (0.575)
	t+2	-1.143** (0.557)	-1.157** (0.582)
	t+3	0.377 (0.563)	0.423 (0.582)

Table 5-1. Profitability (Part II)

		All sample	*Sample excluding three cases*
ROA	t+4	0.661 (0.568)	0.862 (0.595)
	t+5	0.490 (0.569)	0.607 (0.596)
Net business income/Total assets	t-5	-0.494 (0.626)	-0.376 (0.654)
	t-4	-1.135* (0.620)	-1.023 (0.648)
	t-3	-0.512 (0.621)	-0.277 (0.649)
	t-2	-0.095 (0.622)	0.247 (0.650)
	t-1	0.514 (0.622)	0.789 (0.650)
	t	-1.030* (0.622)	-0.817 (0.650)
	t+1	-1.101* (0.622)	-0.968 (0.650)
	t+2	-0.967 (0.630)	-0.957 (0.658)
	t+3	0.346 (0.629)	0.360 (0.658)
	t+4	0.283 (0.628)	0.436 (0.657)
	t+5	0.593 (0.643)	0.702 (0.673)
Loans to deposits spread	t-5	-0.228 (0.847)	-0.194 (0.886)
	t-4	0.047 (0.839)	0.168 (0.878)
	t-3	0.196 (0.841)	0.307 (0.879)
	t-2	0.344 (0.841)	0.486 (0.880)
	t-1	0.335 (0.842)	0.438 (0.880)
	t	-3.776*** (0.842)	-3,699*** (0.880)
	t+1	0.669 (0.842)	0.846 (0.880)
	t+2	0.711 (0.852)	0.867 (0.892)
	t+3	0.846 (0.851)	0.875 (0.891)
	t+4	0.910 (0.850)	1.006 (0.890)
	t+5	1.467 (0.870*)	1.503 (0.912)
Overall interest spread	t-5	-0.436 (0.755)	-0.489 (0.790)
	t-4	-0.614 (0.748)	-0.520 (0.783)
	t-3	-0.221 (0.750)	-0.042 (0.784)
	t-2	0.103 (0.750)	0.318 (0.785)
	t-1	0.255 (0.751)	0.389 (0.785)
	t	-0.343 (0.751)	-0.209 (0.785)
	t+1	0.487 (0.751)	0.641 (0.785)
	t+2	0.651 (0.760)	0.782 (0.795)
	t+3	0.928 (0.759)	1.016 (0.795)
	t+4	1.050 (0.758)	1.186 (0.794)
	t+5	1.053 (0.776)	1.125 (0.814)
sampl		1989-2008	1989-2008
Periods included		20	20
Cross-sections included		200	197
Total panel (unbalanced) observations		3984	3940

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

5.2.2. Efficiency in terms of cost reduction

Efficiency in terms of cost reduction is summarized in Table 5-2. 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 5-2 it is found that personnel expenses significantly and considerably decrease after mergers. On the other hand, it is not possible to obtain significant results on the cost equipment to income ratios. Table 5-2 suggests that mergers promote a reduction in personnel expenses to income ratio, leading to better cost efficiency.

Table 5-2. Efficiency

		All sample	***Sample excluding three cases***
Cost income ratio	t-5	1.400* (0.7442)	1.384* (0.7779)
	t-4	2.026*** (0.7375)	1.931** (0.7704)
	t-3	1.122 (0.7386)	0.984 (0.7716)
	t-2	0.390 (0.7391)	0.253 (0.7722)
	t-1	0.109 (0.7396)	0.109 (0.7726)
	t	-0.248 (0.7398)	-0.370 (0.7728)
	t+1	-1.109 (0.7396)	-1.327* (0.7727)
	t+2	-0.857 (0.7484)	-1.169 (0.7827)
	t+3	-1.662** (0.7479)	-1.803** (0.7821)
	t+4	-2.048*** (0.7469)	-2.390*** (0.7809)
	t+5	-1.586** (0.7642)	-1.712** (0.8005)
Personnel expense	t-5	1.076** (0.5485)	1.136** (0.5736)
	t-4	1.306** (0.5435)	1.309** (0.5680)
	t-3	0.610 (0.5444)	0.569 (0.5567)
	t-2	0.013 (0.5447)	-0.081 (0.5694)
	t-1	-0.306 (0.5451)	-0.316 (0.5697)
	t	-1.115** (0.5452)	-1.228** (0.5699)
	t+1	-1.883*** (0.545)	-2.052*** (0.5698)
	t+2	-1.767*** (0.5516)	-1.987*** (0.5771)
	t+3	-2.249*** (0.5512)	-2.344*** (0.5767)
	t+4	-2.441*** (0.5504)	-2.627*** (0.5758)
	t+5	-2.130*** (0.5632)	-2.202*** (0.5902)
Cost of equipment/Business income	t-5	0.377 (0.2962)	0.309 (0.3090)
	t-4	0.742** (0.2936)	0.654** (0.3060)
	t-3	0.593** (0.2940)	0.514* (0.3065)
	t-2	0.461 (0.2942)	0.422 (0.3067)
	t-1	0.486* (0.2944)	0.496 (0.3069)
	t	0.988*** (0.2945)	0.985*** (0.3070)
	t+1	0.827*** (0.2944)	0.784** (0.3069)
	t+2	0.935*** (0.2979)	0.856*** (0.3109)
	t+3	0.676** (0.2977)	0.640** (0.3107)
	t+4	0.506* (0.2973)	0.367 (0.3102)
	t+5	0.648** (0.3042)	0.608* (0.3180)
sampl		1989-2008	1989-2008
Periods included		20	20
Cross-sections included		200	197
Total panel (unbalanced) observations		3984	3940

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

5.2.3. Soundness

The measures of soundness are CAR and loans to deposits ratio. Table 5-3 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 was significant. For loans to deposits ratios, significant results are not observed, showing that loans to deposits ratios are relatively low for the control throughout the sample periods. Table 5-3 implies that relatively unhealthy banks tend to be the merger.

Three cases where the mergers received financial support from the deposit insurance corporate are not included in the sample. The results show a similar tendency to that of all the sample estimations.

Table 5-3. Soundness

		All sample	***Sample excluding three cases***
Capital adequacy ratio	t-5	-0.145** (0.058)	-0.174** (0.060)
	t-4	-0.137** (0.057)	-0.160** (0.060)
	t-3	-0.098 (0.057)	-0.118 (0,060)
	t-2	-0.096* (0.057)	-0.109* (0.060)
	t-1	-0.120* (0.057)	-0.143* (0.060)
	t	-1.196*** (0.057)	-1.255*** (0.060)
	t+1	-0.082 (0.057)	-0.096 (0.060)
	t+2	-0.111* (0.058)	-0.106* (0.061)
	t+3	-0.075 (0.058)	-0.090 (0.061)
	t+4	-0.067 (0.058)	-0.065 (0.060)
	t+5	-0.063 (0.059)	-0.077 (0.062)
Loans to deposits ratio	t-5	-0.149 (0.160)	-0.166 (0.168)
	t-4	-0.157 (0.159)	-0.174 (0.166)
	t-3	-0.160 (0.159)	-0.177 (0.166)
	t-2	-0.158 (0.159)	-0.173 (0.166)
	t-1	-0.163 (0.159)	-0.178 (0.166)
	t	-0.176 (0.159)	-0.192 (0.166)
	t+1	-0.182 (0.159)	-0.200 (0.166)
	t+2	-0.174 (0.161)	-0.191 (0.169)
	t+3	-0.171 (0.161)	-0.186 (0.168)
	t+4	-0.191 (0.161)	-0.207 (0.168)
	t+5	-0.255 (0.164)	-0.278 (0.172)
sampl		1989-2008	1989-2008
Periods included		20	20
Cross-sections included		200	197
Total panel (unbalanced) observations		3984	3940

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

In summary, there is some evidence that mergers have some cost efficiency effects 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. Sakai, Tsuru and Hosono (2009) find that merged Shinkin banks are less profitable, worse in cost efficiency and have inferior soundness compared to surviving Shinkin banks. Our findings are similar to what they found although the sample period is different from that examined in their paper.

6. CONCLUSIONS

In this study, influences of mergers, performances of Shinkin banks are analyzed by reviewing data, statistically comparing and estimating the pre- and post-merger financial indicators. One of the most plausible reasons for banks to engage in merger activities is that mergers tend to improve business performances of banks as suggested by Berger et al. (1999). Our results indicate that mergers partially contribute to improve profitability and promote cost efficiency, especially reduce personnel expenses to

income ratios. More closely, our main results show that mergers improve the profitability of merger banks even though they may temporally dampen it at the merger-year. The Mergers may also increase efficiency by cutting costs, especially in personnel expenses, and slightly improve CARs without regaining its pre-merger level. Positive effects on the merging Shinkin banks are observed.

Our results are not contradicting from those of many other studies concerning profitability and efficiency of bank mergers however corporate governance structure of Japanese Shinkin banks are rather different from ordinary banks. Hypothesis on maximizing shareholder value, financial stability hypothesis and empire hypothesis by managers mentioned in an earlier section are not strictly applicable for Shinkin banks as their operations are limited, they are not limited companies and the Shinkin Central Bank serves for individual Shinkin banks. The limitations of this study are that not all parts of theories are applicable due to the unique governance structure and only the parts relevant for our research are used. Future research can focus more on the theoretical framework of Shinkin banks such as agency problems and corporate governance issues.

This study contributes to the literature in the following points. First, a detailed explanation of all merger cases are shown on the website and all Shinkin banks data over the period 1989-2008 are used, which covers virtually all mergers in Japanese Shinkin banking sector. Especially, our data fully covers mergers in the period of the Japanese financial crisis in 1997-2002. Second, scrutinizing every merger, all mergers are classified into 5 types of mergers. Third, in order to determine accurate control group, the control group is matched with the merger (the treatment) banks by not only time but also an area (a prefecture). It is believed that this study built a good foundation for future researches within the field as merger activities of Shinkin banks were too complicated to analyze.

As a methodology to estimate merger effects, “difference in difference” (DID) is used. In DID, it is assumed that the treatment (the merger banks) and the control groups share parallel movement over time. The related literature points out that the method of DID does not overcome the so-called the selection bias problem. We partly overcome this problem by matching area and using the fixed-effect model. Lastly, we explicitly consider the effect of a capital injection by the government on post-merger performance. Capital injections seem to smoothen the negative impact of mergers on each characteristic variables of the merger.

Our findings show the positive merger effects on managerial performances of Shinkin banks. The results that mergers improve Shinkin banks’ performance are supportive of the recent wave of mergers.

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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 most 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

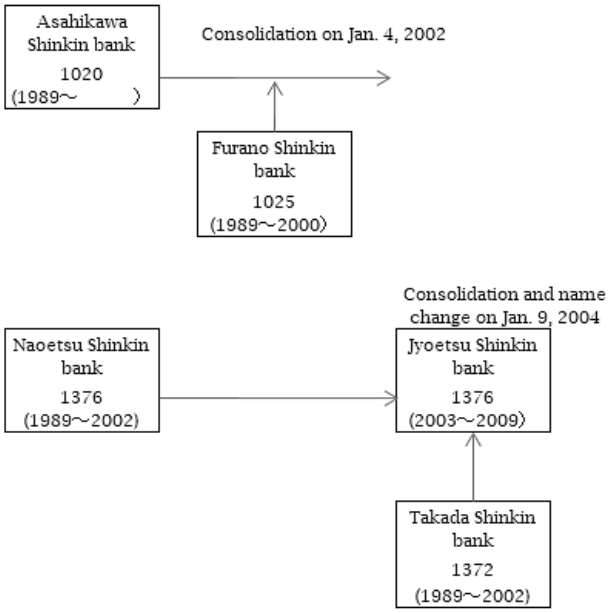
paper), 2) Sequential merger cases (a Shinkin bank repeatedly merging with other Shinkin banks), 3) Complex merger cases (merging and being merged repeatedly in a case), 4) Merger cases where other types of financial institutions are involved (credit unions are sometimes included), and 5) Others (Shinkin 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.

Figure A.1. Simple merger examples



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

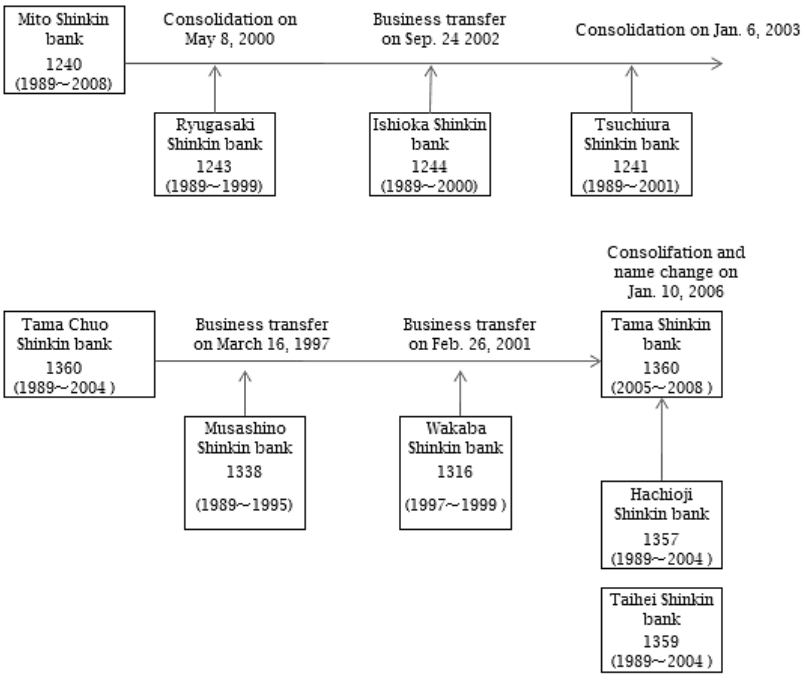
Mito Shinkin bank sequentially merged with several Shinkin banks. It merged with Ryugasaki Shinkin bank on May 2000, Ishioka Shinkin bank on September 2002, Tsuchiura Shinkin bank a half year later of the second merger, and then now exists as Mito Shinkin bank. Cases such as Mito Shinkin banks are excluded 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 an operation 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 an 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).

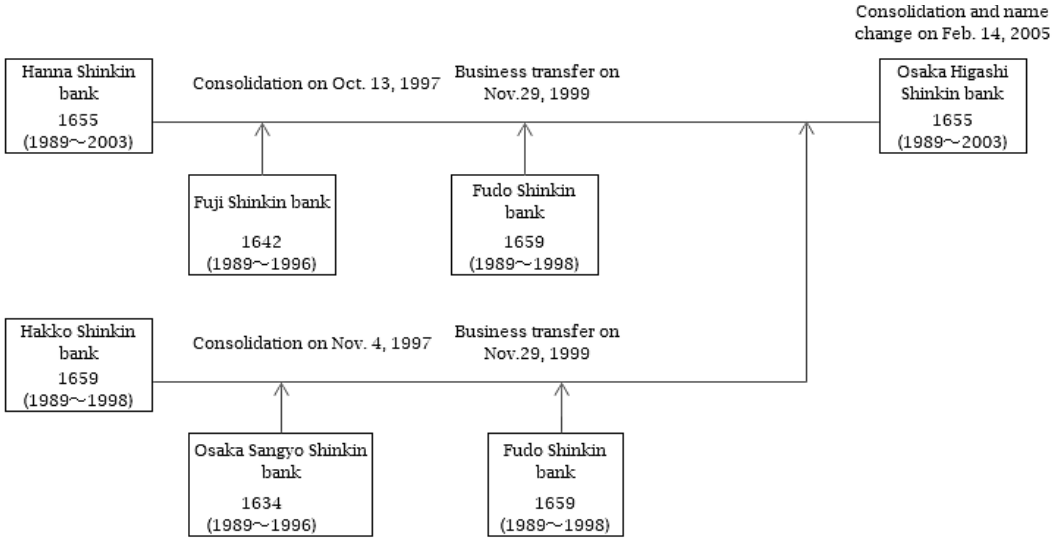
Figure A.2. Sequential merger examples



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.

Figure A.3. Complex merger examples (1)



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.

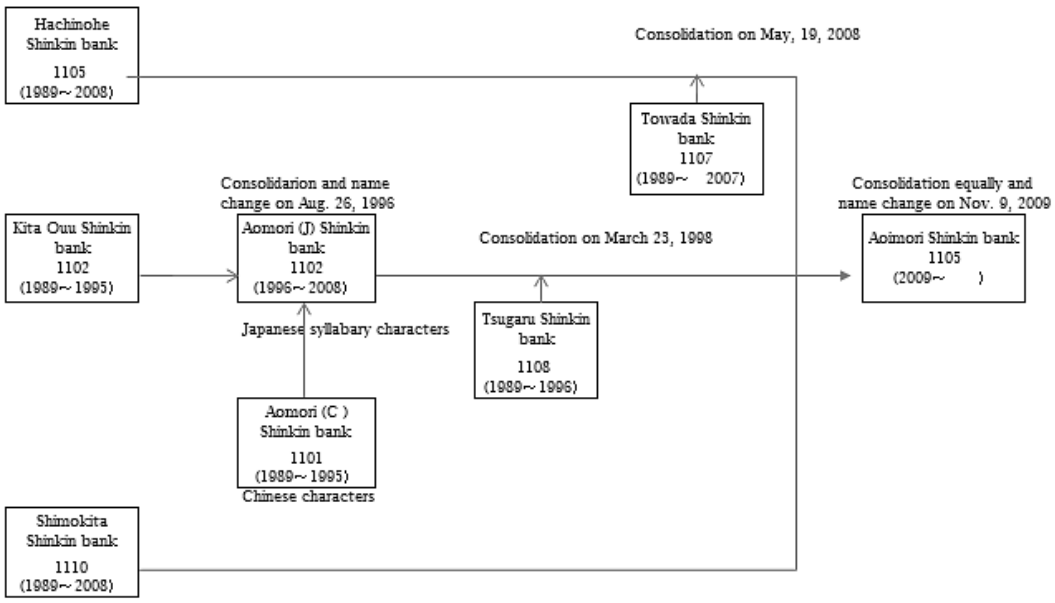
There are many other complex merger cases in the Shinkin bank industry. Another case of a consolidation structure in Aomori prefecture is a good example that shows the meaning of an existing financial code rather than the name of a financial institution.

Aomori 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 assistance 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. Aomori 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 (All of the structural changes in the Shinkin bank industry is available in the following website: http://c-faculty.chuo-u.ac.jp/blog/kimieh/en/shinkin-e-elimination-and-consolidation/ (accessed 31 July 2018)).

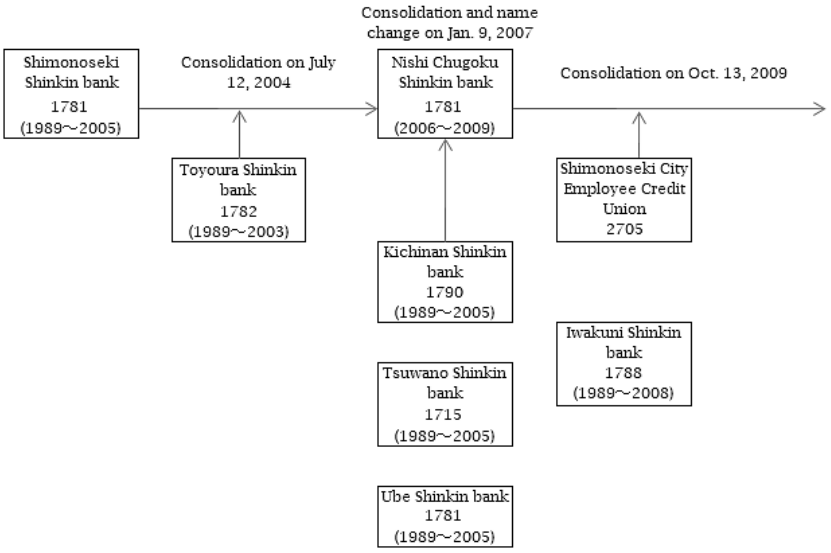
Figure A.4. Complex merger examples (2)



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

Figure A.5. Merger example where a credit union is involved



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

Other type of organizational restructuring includes the 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.

Figure A.6. Other examples