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No.E04 - 1

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June 2004

**ECONOMIC RESEARCH CENTER
SCHOOL OF ECONOMICS
NAGOYA UNIVERSITY**

Wealth Effect of Public Fund Injections to Ailing Banks: Do Deferred Tax Assets and Auditing Firms Matter?

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[Abstract]

This paper investigates the wealth effect of the public fund injection into Resona Bank on other banks. This paper finds that the injection initially conveyed the auditing firms' strict stance toward deferred tax assets. More importantly, the procedure that the government employed was regarded as the Too-Big-To-Fail policy. Therefore, we are afraid that the Resona injection is counter-productive in the sense that the moral hazard posed to the shareholders of large banks will inevitably be serious and market discipline will become weaker. Unfortunately, the Resona injection will make Japanese banking reform more difficult.

[Key words] Japanese Banks, Public Funds, Too-Big-To-Fail, Tax Efficient Accounting, Deferred Tax Assets

[JEL Classification Code] G21

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** The authors appreciate Professor Joe Peek for his valuable comments. Yamori appreciates Kampo Bunka Zaidan for its financial support.

Wealth Effect of Public Fund Injections to Ailing Banks: Do Deferred Tax Assets and Auditing Firms Matter?

1. Introduction

Since the burst of the bubble economy, Japanese banks have suffered due to huge non-performing loans and large stock price declines¹, with 18 banks, including the Hokkaido Takushoku Bank in 1997 and the Long-Term Credit Bank of Japan in 1998, going bankrupt². Bank analysts estimated that many banks still suffered from a serious lack of capital, and proposed that the Japanese government use public money to recapitalize ailing banks (e.g., Posen and Mikitani 2000). In fact, the Japanese government has injected banks with public funds since March 1998.

In March 1998, the Financial Function Stabilizing Act allowed 21 banks to receive 1.8 trillion yen from the government. The Rapid Recapitalization Act of 1998 (RRA) was passed to enlarge the budget of public fund injections, and 32 banks had received 8.6 trillion yen from the government up to March 2002. The public fund injection scheme of the RRA was terminated in March 2002³. The Deposit Insurance Act was amended and Article 102 was added to enable public fund injections after April 2002. However, the article allows the governments to inject public funds only when a financial crisis is inevitable without the injection of government funds⁴.

¹ See Cargill et al. (1996) and Posen and Mikitani (2000) among others.

² Unlike the United States, there were only 149 Japanese banks in 1995 and there was no bank failure before 1995.

³ Most of the Act was terminated in March 2001. However, banks that applied for capital injections before March 2001 were eligible to receive funds until March 2002.

⁴ Actually, no banks received public fund injections under the auspices of Article 102 until Resona's case and nobody knew what the necessary condition for the injection was and how the injection would be

Although the government had injected more than 10 trillion yen into ailing banks, there was a suspicion whether some banks still lacked enough capital and inappropriately depended on low-quality capital. Particularly, Mr. Takenaka has often expressed his doubts about banks' extraordinary dependency on the deferred tax assets since September 2002 when he was appointed the Minister in charge of the Financial Services Agency (FSA).

On May 17, 2003 (Saturday), the board of directors of Resona Bank decided to apply for public fund injection, because the bank's capital ratio at the end of March 2003 was estimated to be far below the required level (i.e., 4%) without receiving public funds⁵. This news surprised the market because the disclosed capital ratio for September 2002 sufficiently exceeded the regulatory standards, and the capital ratio that Resona Bank had disclosed as an expected figure for March 2003 just before the injection application was about 6.5%. As Resona had already obtained FSA's informal approval before this application was revealed, the Council for Financial Crisis, consisting of the Prime Minister, the Chief Government Spokesman, the Minister of Finance, the FSA's Minister, the FSA's administrator, and the Governor of the Bank of Japan (BOJ), officially approved Resona's application for public fund injection in the evening of May 17 without any substantial discussions⁶. At the same time, the Bank of Japan announced its supports of the Resona Bank in terms of its liquidity needs. After completing several legal procedures, Resona received 1.96 trillion yen from the government in June.

This public fund injection has two important policy implications. First, the main reason why Resona's capital ratio decreased to below 4% was that the auditing firm did not allow Resona to post enough deferred tax assets as capital. Resona wanted to post about 700 billion yen in deferred tax assets as capital for March 2003, while the auditing firm only allowed 435 billion yen⁷. As several other banks had also posted large deferred tax assets as capital before March 2003, these banks were expected to

processed.

⁵ For example, *Nihon Keizai Shinbun*, the most popular economic newspaper, first reported this application in its evening edition on May 17.

⁶ This fund injection was approved based on the first clause of Article 102 of the Deposit Insurance Act.

⁷ *Nihon Keizai Shinbun* May 19, 2003 (in Japanese).

have similar disagreements with their auditing firms. Therefore, the shareholders of weak banks were concerned about the next public fund injections. Thus, the Resona news signaled a new attitude of auditing firms toward deferred tax assets.

The second question is whether the Resona injection was regarded as the Too-Big-To-Fail (TBTF) policy. In the cases of the Long-Term Credit Bank of Japan (LTCB) and the Nippon Credit Bank (NCB), the government nationalized these banks without paying anything to their shareholders. For example, although the share price of the NCB just before the nationalization decision was 158 yen per share, the government determined NCB's shares to be valueless. This was certainly an unfavorable type of public fund injection. However, public fund injections are not always unfavorable to shareholders. If the government purchases their shares at a higher price than their true value, then the shareholders are implicitly bailed out. Of course, this extensive protection surely poses moral hazards regarding shareholders, thereby weakening market discipline to bank managers. By investigating the wealth effect of the public fund injection into Resona Bank on other banks, we can judge whether the injection of public funds encourages market discipline. If weak but large banks gained during the Resona injection, then we conclude that the government policy was regarded as the revival of the TBTF policy.

This paper consists of four sections. Section 2 explains the rise and fall of Resona's share prices during the decision regarding the public fund injection. Section 3 explains the paper's data and methodology. Section 4 presents the results. Finally, Section 5 provides a brief conclusion.

2. Resona's share prices around May 17

As shown in Figure 1, the closing price of Resona Holding was 58 yen per share on May 16⁸. The news

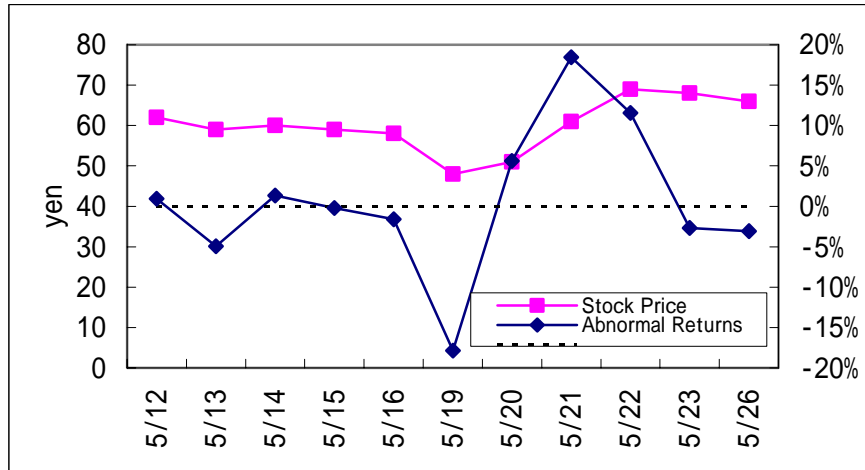
⁸ Resona Holdings consists of the following five subsidiary banks: Resona Bank, Saitama Resona Bank, Kinki-Osaka Bank, Nara Bank, and Resona Trust & Banking Co. Regarding total assets and employees at the end of March 2003, Resona Bank accounted for 77% and 59% of the Holdings, respectively. Due to Resona Bank's substantial importance among subsidiaries, we used the stock prices of Resona Holdings which is listed in the Tokyo Stock Exchange even though Resona Bank itself is not listed.

of Resona's application for capital injection was revealed on May 17 (Saturday). The first trading day after this news was released was May 19 (Monday). On May 19, Resona's price declined by 10 yen to 48 yen. So, it was apparent that market participants regarded the first news as negative to Resona. They seemed to bring the nationalization of the LTCB and the NCB to mind, because news media called this injection "quasi-nationalization." For example, a manager of an investment trust management company commented, "As we are not sure how much the government will force Resona's shareholders to lose, we think that purchasing bank stocks at this moment is very risky" (*Nihon Keizai Shinbun*, May 20).

However, it is interesting that during the period from May 20 to May 22, Resona's share price increased from 51 to 69, which was far higher than its pre-application price (58 yen). This reflected the revision of market participants' view on the public fund injection. On May 21, Minister Takenaka explained at the Committee on Budget and Finance of the House of Representatives that he did not intend to reduce Resona's capital and that Resona's shareholders would incur the costs only by receiving no dividends. This is quite different from the measures taken in the LTCB and NCB nationalizations. *Nihon Keizai Shinbun's* morning edition on May 22 reported that the possibility for Resona's shareholders to lose something became unlikely. It is interesting to investigate whether Takenaka's policy discouraged market discipline. Therefore, the injection of public funds into Resona Bank could be divided into two phases: the first phase (May 19 and May 20) and the second phase (May 21 and May 22).

Figure 1

Resona stock price and its abnormal return around May 17, 2003



(Note) The abnormal return in the Figure is defined as the difference between the returns of Resona shares and the returns of TOPIX. For example, TOPIX declined from 819.17 to 810.49 (-1.07%) and Resona stock declined from 58 to 48 yen (-18.92%) on May 19. Thus, the abnormal return on May 19 is -17.85%.

3. Data and Methodology

(1) Stock Returns and Abnormal Returns

Except for Resona, 97 banks or bank holding companies were listed in Japan during the period in question. We collected the share prices of these 97 banks from May 16 to May 22. The stock return of bank i on day t , r_{it} , is defined as $\log(p_{it}) - \log(p_{i,t-1})$, where p_{it} is the closing share price of bank i on day t .

Following the event study literature, we use the standard market adjustment approach to obtain abnormal returns of individual stocks⁹. Namely, the expected return of each security is defined to be equal to that of the market portfolio. Therefore, abnormal returns (AR_{it}) are defined as the discrepancy

⁹ Yamori (1999), among others, uses this market adjustment approach. Although the market model adjustment is also commonly used, Brown and Warner (1985) found that the event study's conclusions usually do not depend on which approach is used to define abnormal returns.

between the daily returns of security i on day t , r_{it} , and the daily returns of the market portfolio on day t , r^{mkt}_t . Here, we use the Tokyo Stock Exchange Price Index (TOPIX) to calculate market portfolio returns¹⁰.

Our focus is to investigate the wealth effects of the public fund injections to other banks. We assume that AR_{it} reflects how market participants changed the evaluation of other banks when they had received new information regarding the public fund injection into Resona. Therefore, in the following regression, AR_{it} or cumulative abnormal returns (CAR) are our dependent variables.

As Resona's application for public fund injection and the government approval were revealed on May 17 (Saturday), 2003, the first trading day after the news was May 19 (Monday). Therefore, May 19 is set as the event date ($t=0$) in this study. The information might have taken a few days to disseminate across the markets. Thus, we use two-day cumulative abnormal returns (i.e., from May 19 to May 20), $CAR(0,1)$, for the first phase of the injection. However, as shown in Figure 1, the wealth effects in the first phase might be revised after the details of the government policy had been revealed. So, it is also interesting to investigate the revised wealth effects of the fund injection. We use another two-day cumulative abnormal return (i.e., from May 21 to May 22), $CAR(2,3)$, to investigate the second phase of the injection.

(2) Relevant Bank Characters¹¹

The injection might have conveyed three kinds of new information to the stock markets. First, although all banks disclosed official financial statements, which showed that their capital ratios were higher than the required ratios, the news regarding the Resona's application for public fund injection might have revealed that the true financial conditions of some Japanese banks were too fragile to do without public

¹⁰ TOPIX is a value-weighted index, consisting of all stocks listed in the first section of the Tokyo Stock Exchange.

¹¹ Data sources are the Japanese Bankers Association's *Analysis of Financial Statements of All Banks (September 2002)*, Official Financial Statement of each bank as of September 2002, and Toyo Keizai Shinposha's *Japan Company Quarterly (2003 II)*.

money. If so, the market would negatively evaluate weak banks, which were more likely to report disguised financial statements. In this respect, we include some proxies for bank solvency.

The second type of information conveyed by the injection is whether the government pursued the Too-Big-To-Fail (TBTF) policy. As explained above, the market participants were initially unsure that this public fund injection into Resona Bank was TBTF protection, but in the second phase of the injection they seemed to believe in TBTF protection. Therefore, in order to control the size effect, we include size-related variables into the equation.

The third information was related to the auditing firms' stance toward deferred tax assets (DTA). Although auditing firms allowed banks to post DTA as capital for March 2002 as much as total expected profits in the coming five years, they changed their stance and restricted banks to post DTA as capital for March 2003. If this information is important, then the DTA of each bank would be related to the injection's wealth effects. Also, if the markets believed that the discretion of the auditing firms was large, then the wealth effect might depend on the particular auditing firm employed by the bank. Therefore, in order to evaluate the effect of the auditing firms' stance toward DTA, we include the auditing firm dummies in the estimation model.

(i) Bank Solvency

If the injection signals that actual bank conditions were worse than officially disclosed, banks with weaknesses similar to those of Resona Bank would have been more vulnerable to the revelation of the injection. We use the following four variables as solvency proxies.

First, a bank with a lower capital ratio was more likely to be forced to apply for a public capital injection. Here, the capital ratio as of September 2002 was used as a proxy for a bank's financial condition. We used the data as of September 2002, not March 2003, because the data for March 2003 was not yet available when the Resona news was released, and data for September 2002 were the latest information¹².

Unfortunately, Japanese banks reported two kinds of capital ratio: the International Standard

¹² All the variables listed below were as of September 2002.

Capital Ratio and the Domestic Standard Capital Ratio. As these ratios are calculated in a different manner, we can not compare them directly¹³. We include a dummy variable to control the difference in capital standards. The dummy, BISDU, takes unit value when a bank employs the International Standard Capital Ratio, and is zero otherwise.

The second proxy for a bank's financial condition is the bad loan ratio (BADRAT), which is defined as the ratio of non-performing loans to total assets. The third proxy is a dummy variable reflecting whether a bank paid dividends. As it is often said that Japanese accounting standards allowed banks to manipulate balance sheet figures (e.g., capital ratio or bad loan ratio), what they actually did (i.e., paying dividends or not) is more reliable information regarding Japanese bank's financial conditions (See, for example, Spiegel and Yamori 2004). So, we use a dummy variable (DIVID) which takes unit value when a bank paid dividends for March 2002, and is zero otherwise. The fourth proxy for a bank's financial condition is the latest expected returns on equity (ROE).

(ii) Size

Size might matter if the government's decision to inject public funds into Resona was regarded as an expression of the Too-Big-To-Fail policy. Total Assets (TAS) is used as a proxy for size. The natural log of TAS (LTAS) is used for the estimation. The market participants regarded the nationalizations of the LTCB and the NCB as a signal that government abandoned the TBTF policy. So, if the Resona's injection meant the revival of the TBTF policy, then the market participants should have revised their evaluations of large banks.

However, even if Resona was rescued by the TBTF policy, the TBTF guarantee was confirmed only regarding banks larger than Resona. So, our second proxy for size is a dummy variable that takes

¹³ The important differences between them are as follows: (1) The international standard allows banks to include unrealized profits regarding securities portfolios into TIER2 capital while the domestic standard does not, (2) 1.25% of Loan Loss reserves are allowed to be included as Tier2 for the international standard and 0.625% for the domestic standard, (3) The international standard adds market risks to the denominator (i.e., risk assets) and can include TIER3 in capital, but the domestic standard does not.

unit value if the total assets of a bank were larger than those of Resona and takes zero otherwise. This dummy variable is denoted as SIZEDU. If market participants regarded the injection as the TBTF policy, then the size variables have positive coefficients.

(iii) **Deferred Tax Assets and Auditing Firms**

As explained in the Introduction, Resona Bank was short of capital because the auditing firm approved the amount of deferred tax assets (DTA) far less than Resona needed. Other banks that depended on the DTA would face a similar problem. Here, the ratio of DTA to Capital, DTARATIO, is used for the dependency of the DTA. Figure 2 shows the distribution of the DTARATIO for September 2002. The Resona's value was 0.81 and the mean value regarding all 98 banks, including Resona, was 0.29. There were two banks that had higher DTARATIOS than that of Resona: the Mitsui Trust Bank and Ashikaga Bank. If the auditing firms denied a large part of the DTA as capital, many banks were forced to be below regulatory capital ratios. Therefore, if the coefficient for the DTA is significantly negative, the injection conveyed information regarding the auditing firms' new stance toward the DTA.

If auditing firms had large discretion regarding the DTA, who audited the bank might matter. There were 148 auditing firms in Japan at the end of May 2003. Asahi, Shin-Nihon, Chuo-Aoyama, and Tohmatsu are called the big four¹⁴. Asahi audited 21 banks, Shin-Nihon audited 35 banks, including Resona, Chuo-Aoyama audited 21 banks, Tohmatsu audited 20 banks, and the remaining auditing firms audited 11 banks¹⁵.

At first, Asahi and Shin-Nihon jointly audited Resona¹⁶. Suddenly, Asahi stepped out in April

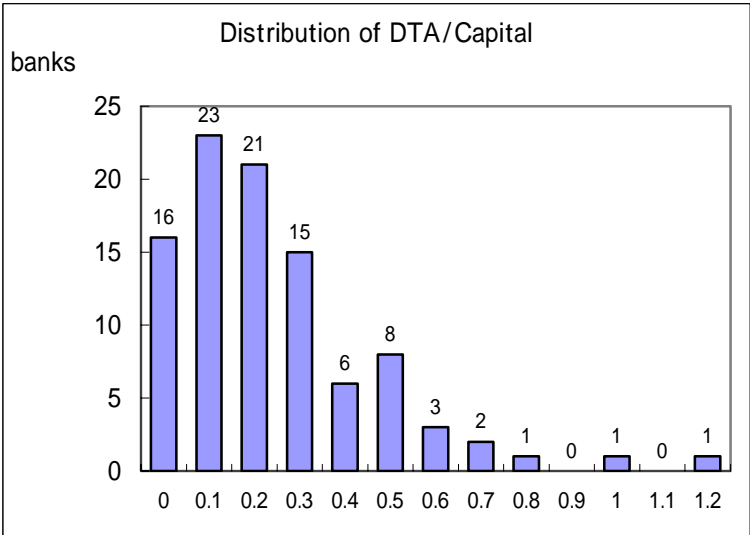
¹⁴ Each of these four firms forms an alliance with international auditing firms; Asahi (becoming Azusa after mergers in 2004) is in alliance with KPMG, Shin-Nihon with Ernst & Young, Chuo-Aoyama with PricewaterhouseCoopers, and Tohmatsu with Deloitte Touche Tohmatsu.

¹⁵ Totally, there were 108 auditing relationships, while there were 98 banks. This is because two auditing firms sometimes audit a bank jointly.

¹⁶ Asahi Bank and Daiwa Bank were merged into Resona Bank on March 1, 2003. Before the merger, Asahi Auditing Firm audited Asahi Bank and Shin-Nihon audited Daiwa Bank.

2003 and Shin-Nihon alone audited Resona. After the application for the public fund injection, Asahi's representative mentioned that Asahi would have allowed Resona to post so small a DTA that Resona would be insolvent. Even more the generous Shin-Nihon allowed smaller DTA than Resona wanted, forcing Resona to apply for public fund injections. We include who-is-the-auditor dummies in the estimation. Namely, DAsahi takes unit value if Asahi audits the bank, and is zero otherwise. DShinnihon, DChuo, and DTohmatsu are defined in the same way. If the coefficients for these dummies were significant, then the market participants believed that the auditing firms had discretionary power on evaluating DTA.

Figure 2



(Notes) As of September 2002.

4. Empirical Results

(1) Distribution of the Cumulative Abnormal Returns

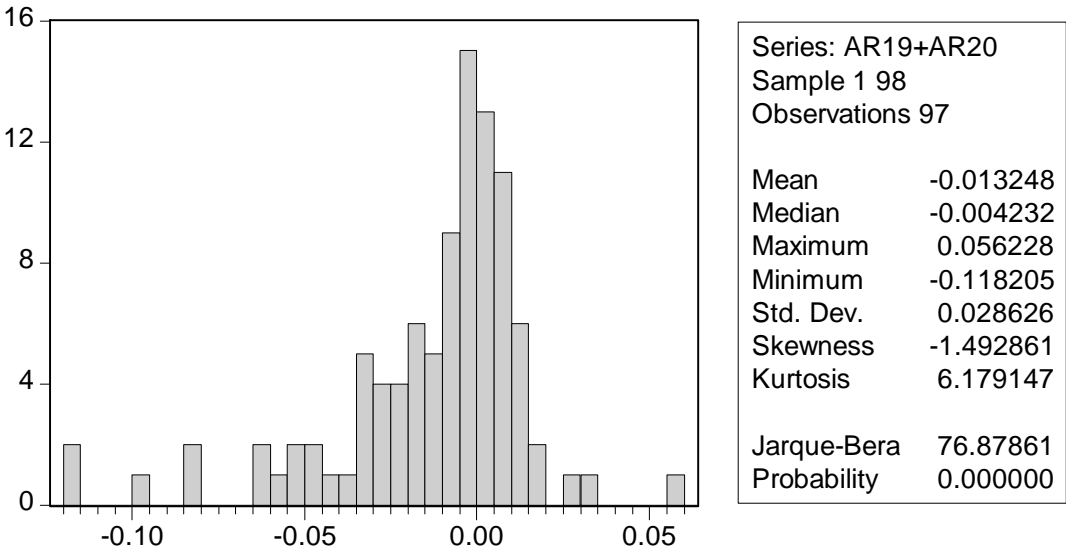
The distribution of the two-day cumulative abnormal stock returns of all banks for May 19 and May 20 is shown in Figure 3. This distribution is not symmetric. Particularly, 10 banks recorded negative abnormal returns of less than -5%, while only one bank recorded a positive abnormal return of more than

+5%. Therefore, in the first phase, the market participants interpreted this news regarding Resona as having a negative effect on banks in general.

Figure 4 shows the distribution of the two-day cumulative abnormal stock returns of all banks during the injection’s second phase (i.e., May 21 and May 22). The largest positive abnormal returns are for the Mizuho Financial Group (15.3%)¹⁷. Although weak, the Mizuho FG is the largest banking group in Japan and is a natural candidate for TBTF protection. Except for the relatively healthy Mitsubishi-Tokyo FG, other two megabanks (i.e., Mitsui-Sumitomo FG and UFJ Holdings) also recorded larger positive abnormal returns (i.e., 6.5% and 7.1%, respectively)¹⁸. Therefore, the market participants seem to have regarded the injection into Resona Bank as favorable news for large banks.

Figure 3

Distribution of CAR(0.1)

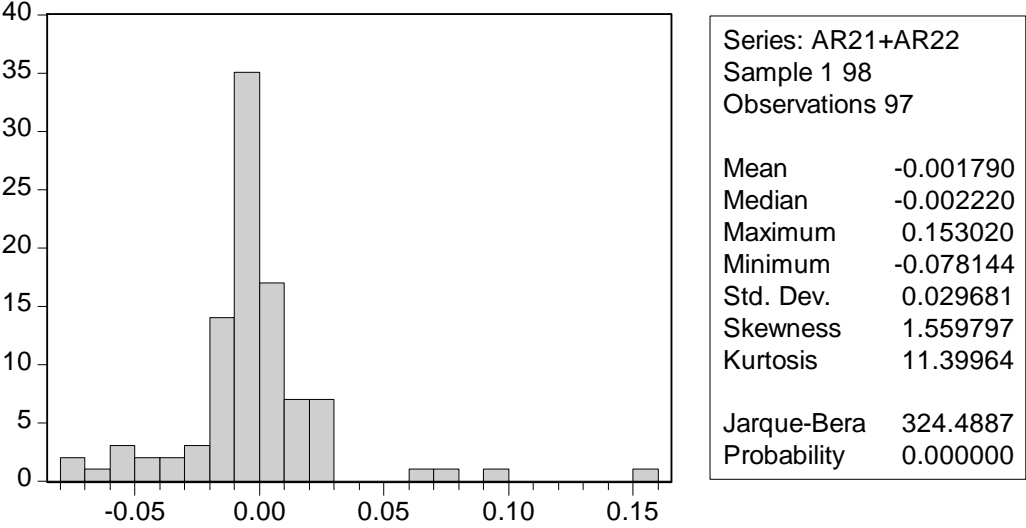


¹⁷ Mizuho Trust Bank, which is a member of the Mizuho FG but is independently listed, recorded the second-largest positive returns.

¹⁸ S&P assigned a BBB credit rating to Mizuho, Mitsui-Sumitomo, and UFJ, while it assigned a BBB+ rating to Mitsubishi-Tokyo in May 2003.

Figure 4

Distribution of CAR(2,3)



(2) Results of the First Phase of the Injection: Dependent Variable=CAR(0,1)

The results of the estimation when we used CAR(0,1) as a dependent variable is shown in column 1A in Table 1. First, no solvency variables are significant. This is in contrast with previous studies, which found that bank failures revealed new information regarding a bank’s true solvency (e.g., Yamori 1999). This suggests that the news regarding the injection did not uncover a bank’s previously masked actual conditions. Due to the disclosure reforms and FSA's extensive bank examinations, it is natural that this news contained no new information about bank solvency. Therefore, this suggests that the disclosed ratios were more credible than before.

Second, the coefficient for the size variable (LTAS) is negative, though insignificant. This negative coefficient is contradictory to the TBTF interpretation, which expects a positive coefficient, because larger banks were more likely to suffer from stock price declines when the Resona shock occurred. This is consistent with the fact that in the first phase of the injection the market participants were reminded of the nationalization of the LTCB and the NCB. However, it is more appropriate to

conclude that the market participants were unsure of the TBTF protection because the coefficient was insignificant. We do not report the result using the SIZEDU variable, because the coefficient of SIZEDU is insignificant and the inclusion of SIZEDU does not qualitatively change other coefficients.

Finally, DTARATIO has a significantly negative coefficient. That is, a bank with greater dependency on the DTA more likely to have suffered from stock price declines. This suggests that the injection conveyed the information that the auditing firms' stance toward the DTA became stricter than expected before news of the injection.

Column 1B shows the results of estimation including the auditing firm dummies. All four dummies are insignificant. Therefore, the market participants regarded the Shin-Nihon's stance toward Resona's DTA as common among auditing firms.

We also estimate a simplified equation by eliminating all solvency proxies except CAPRATIO and BISDU from the 1A equation. This result is shown in column 1C in Table 1. Still, the CAPRATIO and BISDU variables have insignificant coefficients. The size variable is negative and now significant. The coefficient of the DTA remains significantly negative. Therefore, news of the public fund injection into Resona Bank was regarded as bad news for banks with higher dependency on the DTA and, to the lesser degree, for larger banks.

Table 1

The First Phase Results; Dependent variable =CAR(0,1)

Variable	1A		1B		1C	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	0.080	1.238	0.082	1.313	0.105	2.346
CAPRATIO	0.002	0.629	0.002	0.681	0.002	0.745
BISDU	-0.007	-1.035	-0.008	-1.179	-0.006	-0.909
BADRATIO	0.055	0.647	0.045	0.508		
DIVID	0.006	0.642	0.006	0.594		
EXPROE	0.000	-0.055	0.000	-0.085		
LTAS	-0.007	-1.560	-0.007*	-1.685	-0.008**	-2.215
DTARATIO	-0.046**	-2.490	-0.044**	-2.370	-0.048***	-3.382
Dasahi			0.004	0.416		
Dchuo			-0.001	-0.143		
Dshinnihon			0.000	-0.039		
DTohatsu			0.004	0.619		
Adjusted R ²	0.325		0.298		0.339	
Observations	97		97		97	

(Notes)

(1) t-statistics are calculated based on the White heteroskedasticity-consistent standard errors.

(2) ***:1% significant. **:5% significant. *:10% significant.

(3) Results of the Second Phase of the Injection: Dependent Variable=CAR(2,3)

As the abnormal returns of Resona stocks were larger than 10% on both May 21 and May 22, the market understood that the government did not force Resona's present shareholders to absorb its losses. Despite that Resona would have been insolvent if the DTA had not been included in its capital account, the government did not value Resona's share price at zero. This was quite different from what the government did in the process of the nationalization of the LTCB and the NCB in 1998.

The results are shown in Table 2. According to Column 2A, there are no significant coefficients at the 5% critical level. The coefficient of LTAS is positive and significant at the 10% critical level. The positive coefficient for LTAS suggests that larger banks tended to gain during these two days. This is consistent with the hypothesis that the conditions of public fund injection were regarded as the revival of TBTF policy. The shareholders of other banks, particularly larger banks, felt that they were implicitly protected. This conclusion is more clearly supported by the result in Column 2B, where the SIZEDU is included. Now, the SIZEDU has a significantly positive coefficient. Banks

with total assets larger than those of Resona gained large share price increases in these two days. Coefficients for the DTARATIO in both specifications were not significant at the 5% critical level. This is natural because no new relevant information regarding the auditing firms' stance toward the DTA was released during the second phase. Among solvency variables, only the coefficient for the CAPRATIO is weakly significant in specification 2B. The simplified model result is shown in Column 2C in Table 2. Now the coefficient for the CAPRATIO is significantly positive. Similarly, the coefficient for the DTARATIO is positive. The important result is that the coefficient for the SIZEDU is still significant.

Finally, we estimate the 2A and 2B equations including the auditing firm dummies. The results are shown in columns 2D and 2E. Size-related variables, LTAS and SIZEDU, are still significant. The coefficient for the Tohmatsu dummy is significantly negative, suggesting that banks audited by Tohmatsu would more likely face difficulties than banks audited by other auditing firms. The market participants believed that auditing firms had some discretionary powers.

In sum, the market participants in the second phase of the injection interpreted the public fund injection into Resona Bank as good news for banks larger than Resona Bank. Our result that size was regarded as the most important factor in the second phase, while the financial conditions had little impact, suggests that the injection into Resona Bank was regarded by market participants as the revival of the TBTF policy.

Table 2

The Second Phase Result; Dependent variable =CAR(2,3)

Variable	2A		2B		2C	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
C	-0.180	-2.787	-0.051	-1.144	-0.051	-1.282
CAPRATIO	0.004	1.319	0.005*	1.891	0.005**	2.086
BISDU	0.007	0.735	0.002	0.183	0.002	0.231
BADRATIO	0.090	1.279	0.014	0.253		
DIVID	0.001	0.105	0.001	0.126		
EXPROE	0.000	-0.110	0.000	0.330		
LTAS	0.009*	1.720	-0.001	-0.259	-0.001	-0.222
SIZEDU			0.074***	2.868	0.071***	2.847
DTARATIO	0.027*	1.735	0.024	1.556	0.028*	1.939
Adjusted R ²	0.206		0.320		0.337	
Observations	97		97		97	

Variable	2D		2E	
	Coefficient	t-Statistic	Coefficient	t-Statistic
C	-0.179***	-3.052	-0.060	-1.304
CAPRATIO	0.003	0.973	0.004	1.597
BISDU	0.009	1.062	0.003	0.413
BADRATIO	0.137**	1.994	0.059	1.040
DIVID	-0.007	-0.747	-0.006	-0.770
EXPROE	0.000	0.176	0.001	0.644
LTAS	0.011***	2.304	0.002	0.537
SIZEDU			0.069***	3.094
DTARATIO	0.005	0.274	0.004	0.219
Dasahi	-0.016	-1.387	-0.010	-0.917
Dchuo	-0.021	-1.660	-0.018	-1.455
Dshinnihon	-0.010	-0.942	-0.007	-0.675
Dtohmatu	-0.034**	-2.338	-0.029**	-2.120
Adjusted R ²	0.283		0.383	
Observations	97		97	

(Notes)

(1) t-statistics are calculated based on the White heteroskedasticity-consistent standard errors.

(2) ***:1% significant. **:5% significant. *:10% significant.

5. Conclusions

When market participants initially heard news of the public fund injection into Resona Bank, they were not sure whether this public fund injection into Resona Bank would proceed in the same way as the nationalization of the LTCB and the NCB that occurred in 1998. They feared that even this large bank

would be quasi-nationalized and its shareholders would not be compensated for their stocks, while the FSA Minister mentioned that he did not intend to force shareholders to bear substantial costs. As there was large uncertainty regarding the injection process, it was hard for market participants in the injections' first phase to draw a solid conclusion as to whether the government would employ the TBTF policy. However, the injection had apparent implications regarding the auditing firms' stance toward deferred tax assets.

After a few days passed, market participants found that the Resona injection was quite different from the nationalization of the LTCB and the NCB. The government purchased their stocks at 52 yen (roughly equal to the pre-event price), although Resona would have been insolvent if no DTA had been approved as capital. Judging from our results, the public fund injection into Resona Bank was regarded as a revival of the TBTF policy. Although most of the bank's directors were removed from office, all of its shareholders were protected¹⁹. The public fund injection into Resona was regarded by the shareholders not as punishment of a weak bank but rather as a generous gift. We are afraid that the public fund injection into Resona raises serious moral hazard in shareholders, which will reduce the effectiveness of market discipline. As well, the results of the second phase suggest that the markets participants believed that the auditing firms held some discretionary power. Although this was inevitable when the new rules were introduced, our results suggest that auditing firms should have explained more clearly how the new rules were applied in auditing the March 2003 fiscal statements.

The solvency variables are insignificant in most cases. That is, the injection did not reveal any important information regarding the bank's true financial conditions. Previous studies investigating Japanese bank failures found that failures revealed new information regarding other banks' financial conditions. As banks' financial statements become reliable and extensive due to the disclosure reforms and the FSA's strict supervision, market participants did not have to adjust their disclosed financial ratios after they became aware of Resona Bank's injection of public funds.

We judge that the government's decision to inject funds into Resona Bank without forcing its shareholders to bear the costs will seriously weaken the Japanese banking system, because it

¹⁹ All creditors, not only depositors but also interbank creditors, are also protected.

discourages market discipline. However, the government's action may find support in the positive effect on Resona's customers²⁰. While this paper investigates the wealth effect of the Resona injection on other *banks*, the investigation of the effects of the injection on Resona's corporate *customers* is interesting.

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²⁰ Gibson (1995) found that bank health affects its customers' investment decisions. Furthermore, Yamori and Murakami (1999) found that the Hokkaido Takushoku Bank failure produced a negative wealth effect in regard to firms with closer ties to the Hokkaido Takushoku Bank.