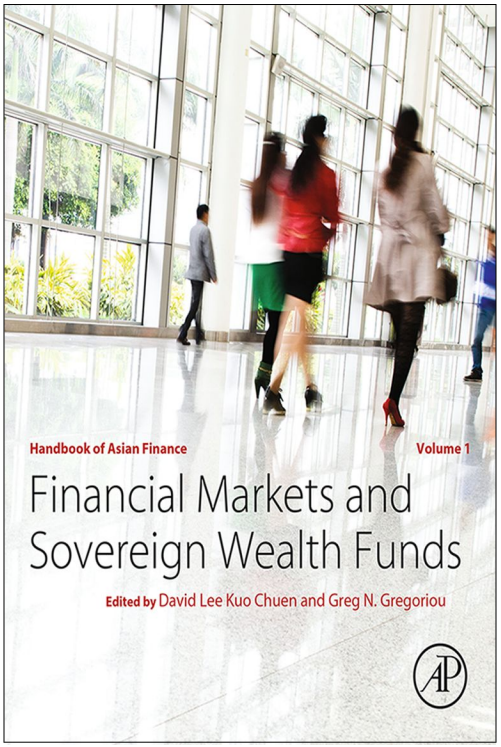

From Heather Montgomery and Yuki Takahashi, The Effect of Bank Mergers on Shareholder Value and Performance in Japan. In: Greg Gregoriou, David Lee, editor, Handbook of Asian Finance Financial Markets and Sovereign Wealth Funds. Vol 1, Oxford: Academic Press Inc., 2014, p. 77-103.
ISBN: 978-0-12-800982-6

CHAPTER 5

The Effect of Bank Mergers on Shareholder Value and Performance in Japan

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Consolidation in the banking sector made headlines following the global financial crisis of 2008, but was already a salient feature of the global banking sector even before the crisis intensified the trend. As illustrated in Figure 5.1, which draws on data from the Federal Deposit and Insurance Corporation, European Central Bank and the Japanese Bankers Association, over the past two decades banking sector consolidation has been a global trend. Certainly, part of that decline is due to bank failures, but from the early 1990s up to 2007 the global banking industry as a whole was relatively healthy, yet the number of commercial banks continued to decline, mostly due to consolidation (Mishkin, 2012, pp. 338–339).

Japan, for example, which started with a highly concentrated banking sector from the outset,[1] has seen the number of banks fall by nearly a quarter since the late 1990s. Over the same period, total assets in Japan's banking sector have risen. Currently, more than half of the assets are held by just three large financial groups that emerged from a wave of mega-mergers around 2000–2001.

Is this trend of banking sector consolidation beneficial to the banks? The main theoretical argument behind mergers and acquisitions is the potential for creating business synergies; usually improvements in efficiency. Consolidated banks may enjoy economies of scale and scope, realizing lower costs and higher profits through benefits such as geographical diversification, product diversification and cross-selling to customers, rationalization of branch networks or the consolidation of back office operations. Research shows, however, that it can be difficult for merged banks to exploit these efficiency gains (Harada and Ito, 2011; Montgomery et al., 2013). This suggests that

[1] Mishkin (2012), a widely used undergraduate textbook on banking, for example, points out that while the United States has around 6500 commercial banks, Japan has only about 100, even though the economy and population of Japan are only about half the size of that of the United States (p. 341).

Handbook of Asian Finance, Volume 1
http://dx.doi.org/10.1016/B978-0-12-800982-6.00005-6

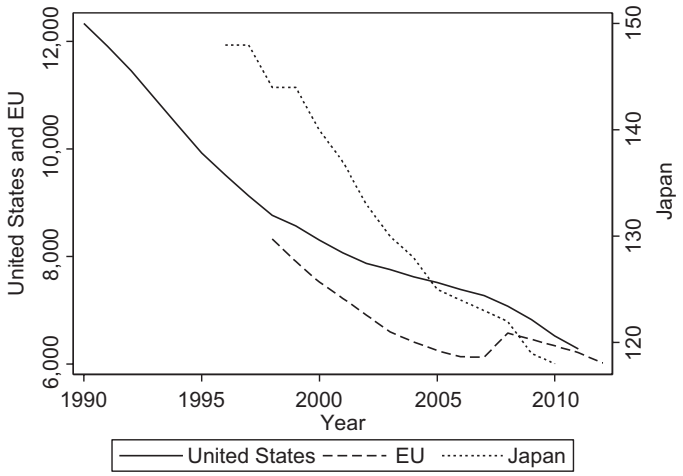

Figure 5.1 Number of banks in the united states, EU, and Japan. *Sources*: FDIC, ECB, Japanese Bankers Association. Data includes all FDIC-insured US commercial banks (US), all EU member countries' credit institutions (EU) and all members of the Japanese Bankers Association (except five banks: the Norinchukin Bank, Citibank Japan, Orix Trust & Banking, Nomura Trust & Banking and Seven Bank).

mergers may be motivated by other potential benefits, perhaps the promise of monopoly profits thanks to increased market power,[2] or simply survival as they become "too big to fail."

In this chapter, we examine the impact of bank mergers on shareholder value and other measures of performance. Do bank mergers and acquisitions create value? Or are the difficulties banks seem to have in exploiting efficiency gains reflected in their stock market value? What about the longer-term impact of bank mergers on other indicators of performance? To explore these questions, we analyze the performance of bank mergers in Japan since the end of the so-called "Financial Big Bang" in the late 1990s: a deregulation of the sector that intended to promote competition.

The rest of this chapter is organized as follows. In section 5.1, we briefly review the existing literature on bank mergers and shareholder wealth and performance. Section 5.2 gives an overview of Japan's financial sector and the merger events analyzed. Section 5.3 explains the details of our methodological approach and section 5.4 the data used in our analysis. In section 5.5, we discuss our findings on both shareholder value and performance ratios. Section 5.6 concludes.

[2] Hankir et al. (2011) find that investors believe that shareholder gains from M&A events in the banking industry come overwhelmingly from exploitation of market power rather than alternative explanations such as efficiency enhancements.

5.1 LITERATURE REVIEW

DeYoung et al. (2009) provide a comprehensive review of the abundant literature on the effect of bank mergers on shareholder wealth and bank performance in the United States and Europe. Their review suggests that European bank mergers in general result in both performance improvement and shareholder wealth creation. North American bank mergers also seem to improve performance in general, but the evidence on the impact of bank mergers on shareholder wealth is mixed. One clear finding that emerges, however, is that mergers in which post-merged entity is deemed to become "too big to fail" positively affect shareholder wealth.

Our own review of the comparatively sparse literature on bank mergers and performance in Japan is less optimistic. In an analysis of five mergers during the crisis period of the late 1990s to the early 2000s, Harada and Ito (2011) find that Japanese bank mergers did not result in financially healthier institutions.[3] Hosono et al. (2009) find that bank mergers in Japan 1990–2004 were motivated by both too-big-to-fail policies and efficiency-improving motives, though neither of the objectives were actually met. In an analysis of the formation of bank holding companies by Japan's smaller regional banks, Yamori et al. (2003) conclude that those mergers had not achieved efficiency gains.[4]

The literature on the effects of bank mergers on shareholder wealth in Japan is even more limited. The only study that directly addresses our research question is an event study analysis of the formation of five Japanese regional bank holding companies on shareholder wealth included in the broader study cited above by Yamori et al. (2003). However, the results of that study are inconclusive: the authors find that the market did not regard announcements of the formation of regional bank holding companies as significant events.

Uchino and Uesugi (2012) analyze a somewhat different, but related question. In an analysis of the merger of Bank of Tokyo-Mitsubishi and UFJ Bank in 2005 they find that the borrowing costs of client firms rose, but do not find any significant difference between the increase in borrowing costs of clients of the acquiring bank (in this case, the Bank of Tokyo-Mitsubishi) and clients of the target bank (UFJ Bank). Their finding suggests that, in contrast with evidence from the United States or Europe, the effects of bank mergers in Japan may not have heterogeneous effects on acquirer and target banks.

[3] They also point out that it is difficult to identify merger acquirer and target under Japanese accounting rule. As discussed later, we also analyze acquirer vs. target, and define target as the bank whose financial institution code is not inherited to new entity.

[4] There is, however, evidence that Japanese small mutual banks achieved efficiency improvement after merger (Yamori and Harimaya, 2009, 2010).

Although work directly related to our research question are limited, there are several other studies that examine the impact of bank *failures* on shareholder wealth or performance in Japan and the implications from this body of research may be relevant here. Yamori and Murakami (1999) analyze Hokkaido Takushoku Bank's failure on its client firm shareholder wealth and find that the closer the relation with the Hokkaido Takushoku Bank, the higher the negative abnormal return of its client firms. Brewer et al. (2003) also find that shareholders of client firms are adversely affected by bank failures, but they find that these negative effects are also experienced by non-client firms. Taking a different approach, Hori (2005) analyzes Hokkaido Takushoku Bank's failure on its client firms' post-event profitability and finds that the client firms do not necessarily report lower profits relative to non-client firms. Taken together, this literature suggests that the effects of bank failures on shareholder wealth and certain measures of performance do not necessarily coincide. Research by Miyajima and Yafeh (2007) sheds some light on the seemingly contradictory findings of Yamori and Murakami (1999) and Hori (2005). Analyzing the effect of the formation of Mizuho Holdings, Sumitomo Mitsui Banking Corporation, and UFJ Holdings on non-financial firms' shareholder wealth, they find that although the announcements did not affect client firms' returns in aggregate, the announcements positively affected the abnormal returns of bank finance-dependent firms.

There is clearly room in the existing literature for more analysis of this important question. Our study contributes to the existing literature as the only comprehensive study of the large number of bank mergers that emerged in Japan after deregulation of the industry in the late 1990s. We examine the effects of these mergers on both shareholder wealth and indicators of bank performance and explore the possibility of heterogeneous effects of bank mergers on different kinds of banks and different kinds of mergers that go beyond the standard acquirer vs. target analysis.

5.2 M&A IN JAPAN'S FINANCIAL SECTOR

Over our sample period of 1994–2010, there were 38 merger and acquisition (M&A) events in Japan's banking sector, nearly all of them domestic deals. Table 5.1 presents some summary statistics of the M&A events included in our analysis and Appendix Table A1 gives specific details on each deal. The summary statistics show that most of the acquirers and targets were medium to large-sized banks and the most common pattern seems to be city bank taking over a different kind of bank, presumably with a slightly different line of business, or a regional bank taking over another regional bank. The number of mergers peaked in 1999 and 2000: those 2 years witnessed about a third of the total M&A deals in our entire sample. 1999–2000 also saw the emergence of what we call the "mega-banks": the three huge financial groups—Mizuho, Tokyo-Mitsubishi-UFJ and The Sumitomo-Mitsui Banking Corporation—all with total assets of more than 80 trillion yen.

Table 5.1 Summary Statistics: Description of Merger Announcements

	Acquirer		**Target**	
By size		of which highly capitalized		of which highly capitalized
Mega	1	1	1	0
Large	12	7	9	3
Medium	20	1	16	2
Small	2	0	1	0
By type		of which cross-type merger		of which cross-type merger
Bank Holding Company	1	0	4	0
City	12	8	6	2
Trust	3	0	6	5
Long-term credit	0	0	1	1
Regional	13	0	4	2
Regional II	8	0	8	1
By year		of which mega-merger		of which mega-merger
1994	2	0	2	0
1995	0	0	0	0
1996	0	0	0	0
1997	1	0	0	0
1998	3	0	2	0
1999	5	3	5	4
2000	7	2	7	4
2001	5	0	2	0
2002	1	0	1	0
2003	2	0	1	0
2004	3	1	2	1
2005	0	0	0	0
2006	1	0	1	0
2007	1	0	2	0
2008	3	0	2	0
2009	2	0	1	0
2010	1	0	1	0
Total	37		29	
Total (pre-cleaned)	39		31	
Total number of events	37			
Total number of events (pre-cleaned)	38			

Notes: Bank type follows categorization by Japanese Bankers Association.

5.3 METHODOLOGY

5.3.1 Obtaining Excess Returns

Our first analysis uses event study methodology. We estimate banks' excess returns around merger announcement dates using what MacKinlay (1997) refers to as a "market model":

$$r_{i,t}^{Stock} = \alpha_i + \beta_i r_t^{Market} + \varepsilon_{i,t} \tag{5.1}$$

where $r_{i,t}^{Stock}$ and r_t^{Market} are return on stock i at time t (return on stock i over a holding period from $t-1$ to t) and return on market index at time t, respectively. We use a market capitalization-weighted index, TOPIX (Tokyo Stock Price Index), for the market index. α_i and β_i are coefficients to be estimated for stock i. $\varepsilon_{i,t}$ is the error term of stock i at time t, which is orthogonal to the information available at time $t-1$, I_{t-1}, $E[\varepsilon_t | I_{t-1}] = 0$. This suggests that ordinary least squares (OLS) gives unbiased and efficient estimates and is thus the preferred specification for equation (5.1). Time frequency is daily, excluding non-business days.

We first estimate equation (5.1) over the estimation window and obtain coefficient estimates $\hat{\alpha}_i$ and $\hat{\beta}_i$. Those estimates are then used in equation (5.2) and calculate a normal return, $r_{i,t}^{Stock-Normal}$, over the event window:

$$r_{i,t}^{Stock-Normal} = \hat{\alpha}_i + \hat{\beta}_i r_t^{Market} \tag{5.2}$$

Because these coefficients are estimated before the effect of the event takes place, equation (5.2) gives a return in the absence of merger announcements.

The abnormal return, $AR_{i,t}$, is calculated by subtracting this predicted normal return from the actual realized return:

$$AR_{i,t} = r_{i,t}^{Stock} - r_{i,t}^{Stock-Normal} \tag{5.3}$$

As seen from equation (5.3), the abnormal return is the deviation of the actual realized return from the normal return and thus represents excess returns triggered by the merger announcement.

Since the abnormal return only shows the excess return on a certain day and not over the entire event window, the period over which the merger announcement may have affected stock returns, we aggregate abnormal returns over the event window and calculate the cumulative abnormal return, CAR_i, for each bank:

$$CAR_i = \Sigma_t AR_{i,t} \tag{5.4}$$

Under the null hypothesis, the abnormal returns follow a normal distribution:

$$AR_{i,t} \sim N\left(0, \sigma_i^2\right) \tag{5.5}$$

where σ_i^2 is the variance of $AR_{i,t}$, which consists of the variance of the error term in equation (5.1), σ_ε^2, and the variance due to the sampling error, which approaches zero with a large estimation window.

Under the null hypothesis, cumulative abnormal returns asymptotically follow a normal distribution:

$$CAR_i \sim N\left(0, L\sigma_i^2\right) \tag{5.6}$$

where L is number of days in the event window. The test statistic z_i is calculated as:

$$z_i = \frac{CAR_i}{\hat{\sigma}_i\sqrt{L}} \tag{5.7}$$

where $\hat{\sigma}_i$ is the sample standard deviation of abnormal return in the event window of bank i.

Finally, as our stock price data already account for stock splits and dividend payments, return on stock i at time t is simply defined as the price change over a day:

$$r_{i,t}^{Stock} = \frac{p_{i,t} - p_{i,t-1}}{p_{i,t-1}} \tag{5.8}$$

where $p_{i,t}$ and $p_{i,t-1}$ are price of stock i at time t and $t-1$, respectively.

We estimate abnormal returns over 4 different event windows (in the following, t represents the announcement date): pre-announcement $(t-30, t+1)$, or 1 month prior to the merger announcement, announcement $(t-1, t+1)$, the days just before and after announcement, post-announcement $(t-1, t+30)$, 1 month after the merger announcement, and long-run post-announcement $(t-1, t+360)$, nearly 1 year after the merger announcement. The estimation window consists of 120 days, starting from 120 days before the first day of each event window.

5.3.2 Shareholder Value Creation Analysis

To examine the determinants of shareholder value around merger events, we compare cumulative abnormal returns between banks and mergers with different characteristics, including acquirer vs. target banks and huge "mega-mergers" vs. regular mergers. In the tables below we compare the differences in mean and median and report test statistics indicating whether the differences are statistically significant at conventional levels.

We then regress those cumulative abnormal returns on those as well as other characteristics to obtain a more complete picture of what would determine whether merger events are value creating. Since the cumulative abnormal return is a point estimate, we account for standard errors in the regression using weighted least squares with the inverse of the square of the standard error of the cumulative abnormal return as a

weight, following the methodology of Campa and Hernando (2006) in their analysis of European financial industry mergers.[5] The resulting model is:

$$\frac{CAR_i}{w_i} = \beta_0 \frac{1}{w_i} + \beta_1 \frac{Target_i}{w_i} + \beta_2 \frac{Mega_i}{w_i} + \beta_3 \frac{HighCapitalized_i}{w_i} + \beta_4 \frac{LowCapitalized_i}{w_i} + \beta_5 \frac{CrossTypeMerger_i}{w_i} + \frac{\varepsilon_i}{w_i} \tag{5.9}$$

where $w_i = \hat{\sigma}_i \sqrt{L}$ is the standard error of the cumulative abnormal return of bank i. The idea is that the larger the weight (i.e. the smaller the standard error), the more accurate the cumulative abnormal return point estimate.

$Target_i$ is a dummy variable indicating a target bank, defined as the bank whose financial institution code is not inherited to new entity. $Mega_i$ is a dummy variable identifying mergers in which the anticipated post-merger asset size exceeds 80 trillion yen. $HighCapitalized_i$ and $LowCapitalized_i$ are 0–1 dummies identifying banks with particularly high or low capitalization ratios as defined as a ratio of market capitalization to total book assets in the top or bottom 25%, respectively, 30 days before the event. $CrossTypeMerger_i$ identifies mergers in which acquirer and target belong to different bank types (regional, city, long-term credit and trust banks), and therefore are presumably focused on different business lines. ε_i is the error term.

5.3.3 Performance Ratio Analysis

To get insight into longer-term post-merger bank performance, we also analyze balance sheet and income statement-based performance ratios. Since we do not have post-merger targets in most cases, we focus on acquirer banks and examine the effect of merger on acquirer banks.

Our objective is to measure the effect of bank mergers on bank performance, comparing the "treatment" group of merged banks to a "control" group of similar banks that did *not* merge, before and after the merger completions. This question really calls for difference-in-difference analysis. However, finding an appropriate control group is difficult: a simple comparison of the post-merger period performance of acquirers and other banks that did not merge may reflect not only the impact of the merger on bank performance, but also other pre-merger differences between acquirer banks and non-merging banks that affected performance. As we show below in Table 5.5, those differences can be significant.

We address this issue by comparing the post-merger performance of acquirer banks with a weighted combination of non-merging banks that are chosen to resemble the characteristics of acquirers in the pre-merger period. This methodology, conceptualized

[5] See Greene (2011) for the technique.

by Abadie and Gardeazabal (2003) as a "synthetic" control method, creates "synthetic" acquirer banks in the absence of a merger event, thus giving us a control group against which to compare the actual acquirer banks which experienced a merger event.

The synthetic control method implements the following algorithm for each bank and each performance ratio to construct the synthetic acquirer control group:

$$W^* = \arg\min_{W \in \varpi} \sqrt{\left(\overline{X}_1 - \overline{X}_0 W\right)' V \left(\overline{X}_1 - \overline{X}_0 W\right)} \tag{5.10}$$

where W is a $J \times 1$ vector of weights whose elements are non-negative and sum to one, with J representing the number of non-merging banks: $\varpi = \left\{(w_1, \ldots, w_j)' \,|\, w_1 + \cdots + w_j = 1, w_i \geqslant 0 \;\; i = 1, \ldots, j\right\}$. $W^\star$ is the vector of optimal weights. $\bar{X}_1$ is a scalar of pre-merger performance ratio of a merging bank, averaged over the pre-merger period. $\overline{X}_0$ is a $1 \times J$ vector whose elements are pre-merger performance ratio of non-merging bank j, averaged over the pre-merger period for each non-merging bank. The synthetic acquirer bank's performance ratio at time t, for both pre- and post-merger period, is defined as $X_{1t}^* = X_{0t} W^*$. V above is a scalar that minimizes mean squared error of X_{1t}^* against the actual acquirer bank's performance ratio in the pre-merger period.

With acquirer and synthetic acquirer banks as a treatment and control group, respectively, we estimate the following difference-in-difference pooled cross section model:

$$\begin{aligned} \gamma_{i,t} = {} & \beta_0 + \beta_1 Merger_i + \beta_2 Mega_i + \sum_{k=1}^{5} \gamma_k PostMerger\ k\ year_{i,t} \\ & + \sum_{k=1}^{5} \delta_k Merger_i \times PostMerger\ k\ year_{i,t} + \beta_3 HighCapitalized_i + \beta_4 LowCapitalized_i \\ & + \beta_5 CrossTypeMerger_i + \theta_t T_t + \rho_i I_i + \varepsilon_{i,t} \end{aligned} \tag{5.11}$$

where $\gamma_{i,t}$ is the performance ratio of bank i at time t. $Mega_i$, $HighCapitalized_i$, $LowCapitalized_i$, and $CrossTypeMerger_i$ are as defined in equation (5.9), but now book value is used for high and low capitalization. These variables are defined a year prior to the merger event and thus time invariant. T_t represents time-fixed effects and I_i bank-type dummies. $\varepsilon_{i,t}$ is the error term.

$PostMerger\ k\ year_{i,t}$ is a dummy variable for bank i (more precisely bank-event i) that takes a value of 1 in the kth year after merger and 0 otherwise. This variable captures the change of performance ratios in the 5 years following a merger. The time subscript shows that the merger year is different for each bank. $Merger_i$ is a 0–1 dummy that equals 1 for acquirers and 0 for the group of synthetic acquirers. This variable captures the difference between the treatment group, that experienced a merger event, and the control group.

The main variables of interest are the difference-in-difference terms $Merger_i \times PostMerger\ k\ year_{i,t}$, which are the interaction of the terms $Merger_i$ and $PostMerger\ k\ year_{i,t}$ and thus capture the effect of merger events on acquirer banks relative to our control group of synthetic acquirer banks for the kth year after the merger.

5.4 DATA DESCRIPTION

Bank stock data is from the Nikkei NEEDS database; covering the period from 1990 to 2011. The data contains each bank's stock price, already accounting for stock splits and dividend payments, as well as market capitalization of each bank and stock price index TOPIX.

Bank balance sheet and income statement data is from the Japanese Bankers Association's (JBA) "Financial Statement of All Banks," which contains individual bank's detailed balance sheet and income statement items and is available from JBA's website. We use unconsolidated data from 1996 to 2010.

Merger announcement and completion dates are obtained from Nikkei Telecom 21, a Nikkei newspaper article archive. First referencing the JBA's list of transitions of Japanese banks, we checked the *Nihon Keizai Shimbun* and *Nikkei Kinyu Shimbun* (Japan's leading economic and financial newspapers) for all periods for which we have sufficient stock data to estimate the market model explained above, and define the date on which the merger was first announced in the press as the announcement date. This yields 38 announcement dates between October 1994 and July 2010. The corresponding completion dates, which we use in the performance ratio analysis, are determined in a similar way and then double-checked by referring to the JBA's "Transition of Japanese Banks" database. For both merger announcement and completion, event dates are set to these dates, or to the following business day if these dates are on non-business days.

We examine the formation of new bank holding companies and mergers and acquisitions between banks in different bank holding companies, including "subsidiarization," an acquisition of the target's majority ownership while maintaining the target as a separate entity. However, we do not examine mergers and acquisitions in which both the acquirer and target are already in the same bank holding company or the acquirer already owns a majority of the target's shares.[6] We also do not examine "rescue" mergers in which the target bank is already insolvent and under governmental control.

For analysis of excess returns we exclude banks that have returns of zero for more than 1/2 of the days in the estimation window or event window to have reliable abnormal return estimates. This step drops 1 event and 4 banks and leaves us a sample of 37 events among 66 listed banks between 1994 and 2010.

[6] However, as a special case, we do include the so-called "reverse" merger between SMBC and Wakashio Bank.

For analysis of performance ratios we use banks with balance sheet and income statements available at least a year before the merger completion. Unlike for excess return analysis, we instead use subsidiary bank data to analyze merger events involving bank holding companies, since the JBA does not provide bank holding company data. This yields a sample of 33 events with 37 pre-merger acquirer banks, 37 pre-merger target banks, and 35 post-merger acquirer banks between 1996 and 2010.

5.5 RESULTS

5.5.1 Shareholder Value Creation

Cumulative abnormal returns—acquirer vs. target

Table 5.2 summarizes the calculated cumulative abnormal returns for our sample of banks, analyzing the results for acquirer and target banks in four distinct periods. Since the cumulative abnormal return, as explained above, is an estimate, we include both the mean and median observation for each group of banks in each window, and look for statistically significant differences between the two groups using a *t*-test (for the means) and a Wilcoxon rank-sum test (for the medians).

Looking at the first column of Table 5.2, we see a little bit of activity in returns prior to the announcement of a merger event. Cumulative abnormal returns are

Table 5.2 Analysis of Excess Returns: Acquirer vs. Target

	(1)	(2)	(3)	(4)
	Pre-Announcement	**Announcement**	**Post-Announcement**	**Post-Announcement Long-Run**
	***CAR* on $(t-30, t+1)$**	***CAR* on $(t-1, t+1)$**	***CAR* on $(t-1, t+30)$**	***CAR* on $(t-1, t+360)$**
Acquirer				
Mean	0.049**	0.038**	0.014	−0.114
Median	0.022	0.011	0.004	−0.039
Obs.	37	36	37	28
Target				
Mean	0.062*	0.064**	−0.002	−0.010
Median	0.060*	0.046***	0.028	−0.021
Obs.	28	27	28	20
Difference				
Mean	−0.013	−0.026	0.016	−0.104
Median	−0.038	−0.036*	−0.024	−0.018

*Statistical significance at the 10% level.**Statistical significance at the 5% level.***Statistical significance at the 1% level.

positive for both acquirer and target banks in the month prior to announcement. Those returns are larger in the case of target banks, although the difference is not statistically significant.

In column 2 we note that right at announcement, there is a jump up in cumulative abnormal returns. Those returns are again a bit larger for target banks, posting 4.6% or 6.4% of returns, and highly statistically significant.

In the month after announcement, as reported in column 3, cumulative abnormal returns fall back. The long-term perspective 1 year out bears out this finding: column 4 reports that on average cumulative abnormal returns even turn negative for both acquirer and target banks, although post-announcement returns are not statistically significantly different from zero for either group.

Cumulative abnormal returns—mega-mergers

One of the distinctive characteristics of M&As in Japan's financial sector is the sheer size of the deals. Especially around the peak of 1999–2000, a new class of what we term "mega-banks" emerged. These are the three financial groups of Mizuho, Tokyo-Mitsubishi UFJ, and Sumitomo-Mitsui. The debate around whether mergers create business synergies or simply make banks that are "too big to fail" is especially centered around these largest deals. For that reason, we also analyze the influence of size on the cumulative abnormal returns of the banks in our sample in Table 5.3.

Looking at the first column of Table 5.3, we see that for banks entered into a non-mega merger there is no large run-up in cumulative abnormal returns in the month prior to announcement of a merger event. However, for banks entering into a mega-merger, there is a large and statistically significant run-up in cumulative abnormal returns prior to the merger announcement. On average, banks involved in a mega-merger saw returns of 16.5% or 17.5% in the month before the announcement. Those returns were statistically significantly higher than the returns for banks entering into "non-mega" mergers.

On announcement, in column 2, we see a similar trend. Banks involved in mega-mergers post returns about 7.9% (the median) or 12.9% (the mean) higher than normal in the two days surrounding the merger announcement and those excess returns are highly statistically significant. Banks involved in other mergers also posted statistically significantly positive returns on announcement, but those returns were more modest, in the range of 1–2%. The difference between cumulative abnormal returns for banks entering into mega-mergers and banks entering into other mergers is positive and highly statistically significant. Shareholders of banks entering into mega-mergers earned abnormal returns of around 11% on average.

As reported in column 3, 1 month after announcement abnormal returns tend to fall back to normal. In the long-run, a year after the merger announcement (column 4), neither bank group demonstrates any significant positive returns and mean and median cumulative abnormal returns even turn negative for banks entering into non-mega mergers.

Table 5.3 Analysis of Excess Returns: Mega vs. Non-Mega Merger

	(1)	(2)	(3)	(4)
	Pre-Announcement	**Announcement**	**Post-Announcement**	**Post-Announcement Long-Run**
	***CAR* on $(t-30, t+1)$**	***CAR* on $(t-1, t+1)$**	***CAR* on $(t-1, t+30)$**	***CAR* on $(t-1, t+360)$**
Mega-merger				
Mean	0.165***	0.129***	0.116*	0.161
Median	0.175***	0.079***	0.087*	0.291
Obs.	15	15	15	12
Non-mega merger				
Mean	0.021	0.024*	−0.026	−0.148
Median	0.026	0.012**	0.005	−0.093
Obs.	50	48	50	36
Difference				
Mean	0.145***	0.105***	0.142**	0.308
Median	0.150***	0.068***	0.082**	0.385

*Statistical significance at the 10% level.**Statistical significance at the 5% level.***Statistical significance at the 1% level.
Note: Mega-merger is a merger in which the anticipated post-merger asset size exceeds 80 trillion yen.

In summary, for those banks involved in a "mega-merger"—creating one of the largest institutions in the country (or, indeed, the world) with total assets of over 80 trillion yen—we do see evidence of a run-up in cumulative abnormal returns in the month prior to M&A announcements, as well as the 2 days right around the announcement date. Those returns are large, in the range of 17% on average, statistically significant, and statistically significantly higher than the cumulative abnormal returns of banks involved in other, "non-mega," mergers. However, we do not find strong evidence that those abnormal returns are sustained in the long-run.

Cumulative abnormal returns—regression analysis

To further investigate the impact of these and other characteristics on shareholder value, we next turn to regression analysis. The results of estimation of equation (5.9), above, are reported in Table 5.4.

Looking at Table 5.4, we see the results reported above are mostly confirmed. The main predictor of excess returns surrounding announcement of an M&A is whether the deal is a mega-merger or not. In the 1 month pre-announcement window, banks involved in mega-merger deals post large, positive, and highly statistically significant excess returns of around 10%. Column 2 indicates that those excess returns mostly come in the 2 days surrounding announcement of the merger. Readers will also note

Table 5.4 Analysis of Excess Returns: Weighted Least Squares Regression

	(1)	(2)	(3)	(4)
Sample	**Announcement Date**			
Specification	**Weighted Least Squares**			
Dependent Variable	**Pre-Announcement**	**Announcement**	**Post-Announcement**	**Post-Announcement Long-Run**
	***CAR* on $(t-30, t+1)$**	***CAR* on $(t-1, t+1)$**	***CAR* on $(t-1, t+30)$**	***CAR* on $(t-1, t+360)$**
Target	0.014	0.050**	−0.002	0.223
	[0.033]	[0.023]	[0.039]	[0.263]
Mega-merger	0.104**	0.108***	0.075	0.192
	[0.046]	[0.041]	[0.059]	[0.312]
High capitalized	0.041	0.129***	0.013	0.296
	[0.038]	[0.021]	[0.054]	[0.303]
Low capitalized	0.030	0.063***	0.041	−0.051
	[0.029]	[0.018]	[0.037]	[0.277]
Cross-type	−0.020	−0.060**	0.043	−0.159
merger	[0.038]	[0.029]	[0.051]	[0.327]
Constant	−0.007	−0.063***	−0.037	−0.212
	[0.022]	[0.006]	[0.026]	[0.184]
Observations	61	59	61	44
R-squared	0.14	0.57	0.11	0.08
Weight	$\frac{1}{\hat{\sigma}_i\sqrt{L}}$	$\frac{1}{\hat{\sigma}_i\sqrt{L}}$	$\frac{1}{\hat{\sigma}_i\sqrt{L}}$	$\frac{1}{\hat{\sigma}_i\sqrt{L}}$

Statistical significance at the 5% level.*Statistical significance at the 1% level.
Notes: Standard errors in brackets below each coefficient estimate.

in column 2 that banks that are particularly poorly or well capitalized also post highly statistically significant excess returns right at announcement. Target banks, whether entering a mega-merger or not, accumulate positive excess returns of around 5% in the 2 days surrounding announcement of an M&A deal. For all banks, though, these gains dissipate in the long-run post-announcement window 1 year after the M&A deal announcement. This motivates us to explore our next question, about the effect of M&A events on longer-term measures of performance.

5.5.2 Performance Ratios

To explore the longer-term impact of mergers and acquisitions on performance, we turn next to regression analysis of various longer-term measures of performance such as profitability, solvency, inefficiency, lending intensity, provisioning, risk profile, and liquidity. Profitability is measured by the return on equity (net income to total equity), solvency by

the capitalization ratio (the ratio of equity to assets), inefficiency by the cost to income ratio (the ratio of ordinary expenses to ordinary revenue), lending intensity by the loan to asset ratio, provisioning by the ratio of loan loss provisions to total loans, risk profile by the non-performing loan ratio, and liquidity by the ratio of liquid assets to total assets.

Performance ratios—pre-merger acquirer vs. all banks

Table 5.5 compares mean and median values of the various performance ratios for acquirer banks, the entire sample of all banks, and the synthetic control group ("synthetic acquirers") prior to an M&A event.

Looking at Table 5.5, readers may note that prior to a merger event, acquirer banks tend to be statistically significantly less profitable, less solvent and less well-provisioned, despite having a slightly higher ratio of non-performing loans, than the sample as a whole. However, mean and median values for the "synthetic acquirers" reported in Table 5.5 appear much more similar to the pre-merger acquirer group, as we would hope for an appropriate control group.

Performance ratios—regression analysis

We next analyze a "difference-in-difference" specification which compares the difference in "treatment" banks, which experienced a merger event, before and after the event, to the difference in a group of synthetically constructed "control" banks, which never experienced a merger during the sample period, before and after those same events. The main results[7] based upon equation (5.11) are reported in Table 5.6.

Looking at the first row of Table 5.6, we note that banks that experienced mergers tend on average to be less solvent (have lower capital ratios) and more lending intensive than the control group of banks that did not experience a merger event. Banks involved in mega-mergers, however, reverse that tendency, and are statistically significantly *more* solvent and *less* lending intensive than the control group. Acquirers entering into a mega-merger are also statistically significantly more liquid than the control group.

The treatment group of merged banks demonstrates a tendency to become statistically significantly less profitable, less solvent, and more inefficient in the first 2–4 years after experiencing a merger event. Note that this trend remains even after controlling for time fixed effects and other bank characteristics such as type, capitalization ratio, and whether the bank merger was between banks of different types.

The results reported in Table 5.6 are illustrated graphically in Figure 5.2, which plots the evolution of some of the key performance ratios around merger events for all the banks in the sample, as well as the treatment group of acquirer banks and control group of synthetic acquirer banks.

[7] In the interest of brevity, we do not report all coefficient estimates, but only those of most interest. Post-merger-year dummies in general, for example, are estimated as a control but not statistically significant in general, so are not reported below.

Table 5.5 Analysis of Performance Ratios: Pre-Merger Acquirer vs. All Banks and Synthetic Acquirer

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Profitability	**Solvency**	**Inefficiency**	**Lending Intensity**	**Provisioning**	**Risk Profile**	**Liquidity**
	Return on Equity (%)	**Capitalization Ratio (%)**	**Cost to Income Ratio (%)**	**Loan to Asset Ratio (%)**	**Loan Loss Provisions to Total Loans (%)**	**Non-Performing Loan Ratio (%)**	**Liquidity Ratio (%)**
Pre-merger acquirer							
Mean	−12.83	3.76	108.05	68.15	0.95	3.38	6.46
Median	1.63	3.58	97.82	70.43	0.58	2.84	5.87
Obs.	255	255	255	255	244	255	231
Pre-merger all banks							
Mean	−7.85	4.06	108.67	68.91	1.10	3.24	6.88
Median	−9.18	3.71	110.96	69.40	0.79	3.26	7.04
Obs.	255	255	255	255	255	255	255
Pre-merger synthetic acquirer							
Mean	−12.20	3.79	107.47	68.27	0.87	3.30	6.44
Median	−0.98	3.74	99.83	71.15	0.64	2.95	5.85
Obs.	249	249	249	249	198	249	185

Table 5.6 Analysis of Performance Ratios: Pooled OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample	**Acquirer and Synthetic Acquirer**						
Specification	**Pooled OLS with Time-Fixed Effects & Bank-Type Dummies**						
Dependent Variable	**Profitability**	**Solvency**	**Inefficiency**	**Lending Intensity**	**Provisioning**	**Risk Profile**	**Liquidity**
	Return on Equity (%)	**Capitalization Ratio (%)**	**Cost to Income Ratio (%)**	**Loan to Asset Ratio (%)**	**Loan Loss Provisions to Total Loans (%)**	**Non-Performing Loan Ratio (%)**	**Liquidity Ratio (%)**
Merger	0.64	−0.25***	0.11	−0.68*	0.05	−0.14	0.47**
	[3.547]	[0.071]	[1.957]	[0.373]	[0.066]	[0.130]	[0.196]
Mega-merger	6.93	0.23**	−4.56	−5.69***	−0.02	−0.22	2.45***
	[5.725]	[0.114]	[3.158]	[0.602]	[0.124]	[0.210]	[0.304]
Merger × Post-merger 1 year	−39.08***	−0.88***	18.28***	1.48	0.35*	−0.26	0.29
	[11.199]	[0.224]	[6.179]	[1.179]	[0.202]	[0.410]	[0.666]
Merger × Post-merger 2 year	−28.86**	−0.93***	21.67***	0.05	0.47**	−0.54	0.37
	[11.831]	[0.236]	[6.528]	[1.245]	[0.227]	[0.433]	[0.666]
Merger × Post-merger 3 year	−7.07	−0.70***	3.55	−1.14	0.24	−0.56	0.72
	[12.009]	[0.240]	[6.626]	[1.264]	[0.260]	[0.440]	[0.659]
Merger × Post-merger 4 year	2.30	−0.55**	−1.03	−2.03	0.15	−0.32	0.55
	[13.309]	[0.266]	[7.343]	[1.401]	[0.282]	[0.488]	[0.735]
Merger × Post-merger 5 year	−3.57	−0.34	8.24	−1.46	0.59**	−0.43	0.52
	[13.860]	[0.277]	[7.647]	[1.459]	[0.289]	[0.508]	[0.753]
Trust	14.16*	0.16	−4.16	−6.54***	0.41**	0.72**	−2.12***
	[7.765]	[0.155]	[4.284]	[0.817]	[0.162]	[0.284]	[0.447]

(*Continued*)

Table 5.6 Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample	**Acquirer and Synthetic Acquirer**						
Specification	**Pooled OLS with Time-Fixed Effects & Bank-Type Dummies**						
Dependent Variable	**Profitability**	**Solvency**	**Inefficiency**	**Lending Intensity**	**Provisioning**	**Risk Profile**	**Liquidity**
	Return on Equity (%)	**Capitalization Ratio (%)**	**Cost to Income Ratio (%)**	**Loan to Asset Ratio (%)**	**Loan Loss Provisions to Total Loans (%)**	**Non-Performing Loan Ratio (%)**	**Liquidity Ratio (%)**
Regional	4.42	0.43***	0.10	8.62***	0.06	0.39	0.41
	[7.179]	[0.143]	[3.961]	[0.755]	[0.154]	[0.263]	[0.368]
Regional II	0.55	0.36**	0.69	13.15***	0.13	0.41	0.05
	[7.603]	[0.152]	[4.195]	[0.800]	[0.160]	[0.279]	[0.393]
High capitalized	−6.39	1.16***	−2.15	0.23	−0.13	−0.48**	1.50***
	[6.547]	[0.131]	[3.612]	[0.689]	[0.141]	[0.240]	[0.331]
Low capitalized	−5.05	−0.45***	1.83	0.47	−0.10	0.05	−0.46**
	[3.580]	[0.071]	[1.975]	[0.377]	[0.067]	[0.131]	[0.188]
Cross-type merger	2.93	0.21	0.39	0.63	−0.04	−0.05	0.27
	[6.294]	[0.126]	[3.472]	[0.662]	[0.128]	[0.231]	[0.314]
Constant	−10.94	3.79***	113.56***	61.52***	0.82***	5.08***	6.67***
	[9.893]	[0.198]	[5.458]	[1.041]	[0.200]	[0.362]	[0.530]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	912	912	912	912	705	912	741

*Statistical significance at the 10% level.**Statistical significance at the 5% level.***Statistical significance at the 1% level.
Notes: Standard errors in brackets below each coefficient estimate.
The sample consists of acquirer banks and synthetic acquirer banks both before and after the event.

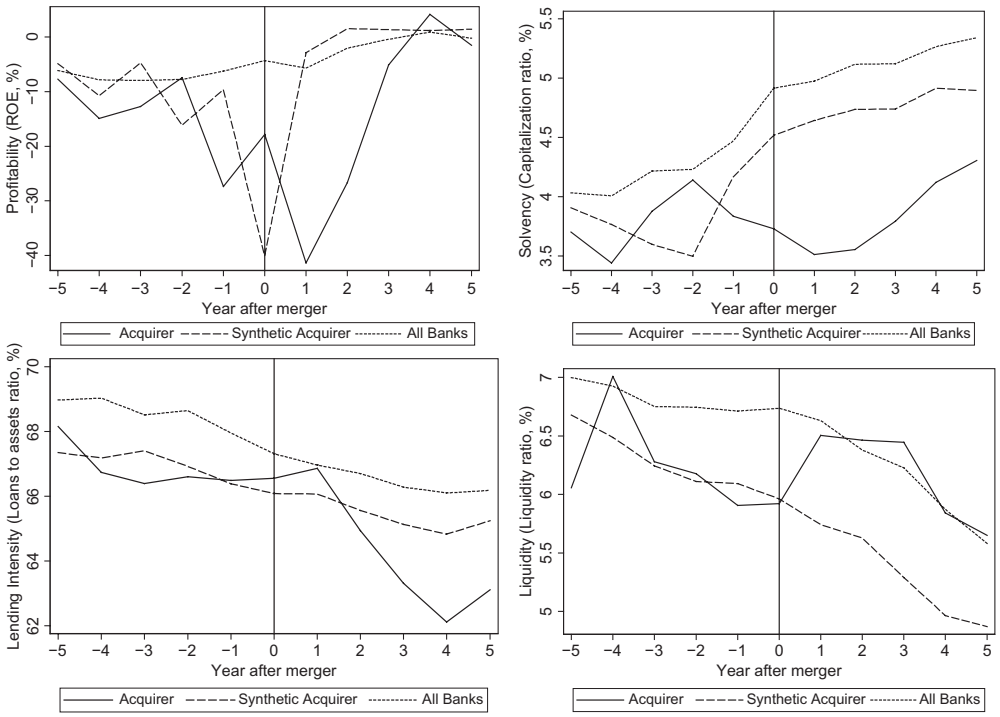

Figure 5.2 Acquirer, synthetic acquirer, and all banks around the merger events.

Given the findings above on the significance of the size of the merger event on shareholder value, we further explore the post-merger performance of the mega-banks. In Table 5.7 we report the main estimation results[8] with a version of equation (5.11), interacting the post-merger year dummies with the dummy variables for mega-mergers and merger banks to see whether banks that experience mega-mergers behave differently from other banks in the first 5 years after merger. In most cases, the mega, merger banks, and post-merger year interaction terms are not statistically significantly different from zero, suggesting that mega-banks do not behave significantly different in the post-merger period than other merged banks.

5.6 CONCLUSIONS

Consolidation, a global trend in the banking sector, intensified in the wake of the global financial crisis of 2008 but was already in motion in the decades leading up to the crisis. This trend was particularly evident in Japan, where a wave of mergers starting in the late

[8] Again, some coefficient estimates are not reported to save space.

Table 5.7 Analysis of Performance Ratios: Pooled OLS with Mega-Merger Interactions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sample	**Acquirer and Synthetic Acquirer**						
Specification	**Pooled OLS with Time-Fixed Effects & Bank-Type Dummies**						
Dependent Variable	**Profitability**	**Solvency**	**Inefficiency**	**Lending Intensity**	**Provisioning**	**Risk Profile**	**Liquidity**
	Return on Equity (%)	**Capitalization Ratio (%)**	**Cost to Income Ratio (%)**	**Loan to Asset Ratio (%)**	**Loan Loss Provisions to Total Loans (%)**	**Non-Performing Loan Ratio (%)**	**Liquidity Ratio (%)**
Merger	0.63	−0.23***	0.34	−0.13	0.06	−0.08	0.34
	[3.877]	[0.077]	[2.141]	[0.399]	[0.071]	[0.141]	[0.218]
Merger × Mega	0.06	−0.15	−1.43	−3.45***	−0.08	−0.37	0.75
	[9.715]	[0.194]	[5.365]	[1.001]	[0.193]	[0.353]	[0.489]
Merger × Mega × Post-merger 1 year	42.81	0.89	−17.25	−0.93	−0.35	−1.26	−1.22
	[29.874]	[0.596]	[16.499]	[3.077]	[0.629]	[1.084]	[1.541]
Merger × Mega × Post-merger 2 year	28.86	0.48	−14.47	−4.29	0.70	−1.42	1.87
	[30.238]	[0.604]	[16.700]	[3.114]	[0.794]	[1.098]	[1.541]
Merger × Mega × Post-merger 3 year	1.10	−0.09	1.68	−4.80	−0.51	−1.40	−0.56
	[30.348]	[0.606]	[16.760]	[3.126]	[0.962]	[1.101]	[1.536]
Merger × Mega × Post-merger 4 year	2.12	0.49	−4.75	−5.17	−0.38	−1.77	−0.24
	[33.117]	[0.661]	[18.289]	[3.411]	[0.736]	[1.202]	[1.683]
Merger × Mega ×	10.94	0.22	−17.00	−6.52*	−0.91	−1.72	−0.76
	[33.486]	[0.668]	[18.493]	[3.449]	[0.930]	[1.215]	[1.698]

Post-merger 5 year							
Trust	14.17*	0.16	−4.18	−6.54***	0.40**	0.72**	−2.08***
	[7.783]	[0.155]	[4.298]	[0.802]	[0.165]	[0.283]	[0.446]
Regional	4.24	0.42***	0.15	8.60***	0.03	0.41	0.45
	[7.198]	[0.144]	[3.975]	[0.741]	[0.158]	[0.261]	[0.367]
Regional II	0.41	0.36**	0.72	13.14***	0.10	0.43	0.06
	[7.622]	[0.152]	[4.209]	[0.785]	[0.165]	[0.277]	[0.391]
High capitalized	−6.58	1.15***	−2.11	0.22	−0.14	−0.47**	1.50***
	[6.564]	[0.131]	[3.625]	[0.676]	[0.142]	[0.238]	[0.329]
Low capitalized	−5.14	−0.45***	1.83	0.46	−0.10	0.05	−0.44**
	[3.591]	[0.072]	[1.983]	[0.370]	[0.067]	[0.130]	[0.187]
Cross-type merger	2.72	0.20	0.44	0.62	−0.10	−0.05	0.26
	[6.311]	[0.126]	[3.485]	[0.650]	[0.136]	[0.229]	[0.312]
Constant	−10.84	3.79***	113.42***	61.29***	0.85***	5.00***	6.66***
	[9.967]	[0.199]	[5.504]	[1.026]	[0.203]	[0.362]	[0.531]
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	912	912	912	912	705	912	741

*Statistical significance at the 10% level.**Statistical significance at the 5% level.***Statistical significance at the 1% level.
Notes: Standard errors in brackets below each coefficient estimate.
The sample consists of acquirer banks and synthetic acquirer banks both before and after the event.

1990s resulted in more than half of the industry's total assets being comprised of just three large financial groups. This chapter sets out to contribute to the existing literature on bank mergers by exploring the impact of these merger events on the shareholder value and performance of the banks involved.

In the analysis of shareholder value, consistent with studies in the United States and Europe, we find some evidence of excess returns just around the announcement of an M&A deal, particularly for target banks. But much larger and highly significant differences are revealed across banks depending on the expected size of the newly-merged entity. Banks entering into a mega-bank enjoy large and highly statistically significant excess returns, which are in turn significantly higher than those of the other banks in the sample, particularly in the few days surrounding the merger announcement.

Regression analysis confirms that although targets exhibit positive excess returns right at announcement of a merger, the main variable determining whether an M&A event announcement generates excess returns is the expected size of the merged entity. Banks merging into mega-banks with total assets of over 80 trillion yen post large, highly statistically significant excess returns in the month before and just around announcement, on the order of about 10%. Those excess returns are not sustained in the long-run, one year after announcement.

Interestingly in light of the above, analysis of performance ratios indicates that the size of the merger event is *not* a significant factor. Although banks entering into mega-mergers are different by some criteria, there is no statistically significant difference in the performance of mega-banks as compared to the rest of the treatment group in the first 5 years of the post-merger period. Merged banks on the whole seem to perform poorly. They demonstrate statistically significantly worse performance in terms of profitability, solvency, and inefficiency 2–4 years after merger, regardless of whether they are mega-banks or not.

This leaves us with some unanswered questions. If performance is not statistically significantly different for mega-mergers, and if the performance for mergers as a whole is *worse* than our control group after merger, then why do banks entering into mega-mergers exhibit such large and highly statistically significant positive run-ups in returns before merger announcement dates? The findings of this study suggest it is unlikely that market participants see the mega-mergers as strategic business mergers that will improve bank performance in the long-run. Taken together, the findings here on shareholder value and longer-term performance suggest that market participants are simply making a "flight-to-safety" as shareholders focus on banks that will become "too big to fail" and thus presumably benefit from regulatory forbearance.

APPENDIX

Table A1 Bank Merger Dates

Post-Merger Bank Name	Announcement Date	Completion Date*	Acquirer Bank	Target Bank	Mega-Merger	Cross-Type Merger	Type of Merger
Mitsubishi Bank	October 12, 1994	November 10, 1994 (none)	Mitsubishi Bank[a]	Nippon Trust Bank[a]	No	Yes	Subsidiarization
Bank of Tokyo Mitsubishi	March 29, 1995	April 1, 1996 (April 1996)	Mitsubishi Bank[a]	Bank of Tokyo[a]	No	No	Merger
Namihaya Bank	October 9, 1997	October 1, 1998 (October 1998)	Fukutoku Bank[a]	Bank of Naniwa	No	No	Merger
Minato Bank	May 15, 1998	April 1, 1999 (April 1999)	Hanshin Bank[a]	Midori Bank	No	No	Merger
Chuo Mitsui Trust & Banking	January 20, 1999	*April 1, 2000* (April 2000)	Chuo Trust & Banking[a]	Mitsui Trust & Banking[a]	No	No	Merger
Fuji Bank	*January 23, 1999*	March 31, 1999 (none)	Fuji Bank[a]	Yasuda Trust & Banking[a]	No	Yes	Subsidiarization
Kinki Osaka Bank	May 18, 1999	*April 1, 2000* (April 2000)	Bank of Osaka[a]	Bank of Kinki[a]	No	No	Merger
Mizuho Holdings (later Mizuho FG)	August 20, 1999	September 29, 2000 (April 2002)	Dai-Ichi Kangyo Bank[a]	**(i)**Fuji Bank[a] **(ii)**Industrial Bank of Japan[a]	Yes	Yes	Merger
Sumitomo Mitsui BC	October 14, 1999	*April 1, 2001* (April 2001)	Sumitomo Bank[a]	Sakura Bank[a]	Yes	No	Merger
Sapporo Hokuyo Holdings	February 10, 2000	April 2, 2001 (October 2008)	North Pacific Bank[a]	Sapporo Bank[a]	No	No	Merger
UFJ Holdings	March 14, 2000	April 2, 2001 (January 2002)	Sanwa Bank[a]	Tokai Bank[a]	Yes	No	Merger

(*Continued*)

Table A1 Continued

Post-Merger Bank Name	Announcement Date	Completion Date*	Acquirer Bank	Target Bank	Mega-Merger	Cross-Type Merger	Type of Merger
Mitsubishi Tokyo FG	April 19, 2000	April 2, 2001 (October 2001)	Bank of Tokyo Mitsubishi[a]	(i)Mitsubishi Trust & Banking[a] (ii)Nippon Trust Bank[a] (iii)Tokyo Trust Bank	Yes	Yes	Merger
Sakura Bank	June 9, 2000	July 25, 2000 (none)	Sakura Bank[a]	Minato Bank[a]	No	Yes	Subsidiarization
UFJ Holdings	July 6, 2000	April 2, 2001 (January 2002)	Sanwa Bank[a]	(i)Tokai Bank[a] (ii)Toyo Trust & Banking[a] (iii)Tokai Trust Bank	Yes	Yes	Merger
Sanwa Bank	September 29, 2000	January 17, 2001 (none)	Sanwa Bank[a]	Senshu Bank[a]	No	Yes	Subsidiarization
Momiji Holdings	*November 1, 2000*	September 28, 2001 (May 2004)	Hiroshima Sogo Bank[a]	Setouchi Bank[a]	No	No	Merger
Fukuoka City Bank	March 14, 2001	December 21, 2001 (none)	Fukuoka City Bank[a]	Bank of Nagasaki	No	No	Subsidiarization
Kyushu Shinwa Holdings	March 14, 2001	April 1, 2002 (April 2003)	Shinwa Bank[a]	Kyushu Bank[a]	No	No	Merger
Chuo Mitsui Trust & Banking	May 23, 2001	June 29, 2001 (April 2012)	Chuo Mitsui Trust & Banking[a]	Sakura Trust & Banking	No	No	Subsidiarization
Daiwa Bank Holdings	August 1, 2001	December 12, 2001 (March 2003)	Daiwa Bank[a]	(i)Kinki Osaka Bank[a] (ii)Nara Bank	No	Yes	Merger

Daiwa Bank Holdings (later Resona Holdings)	*September 8, 2001*	March 1, 2002 (March 2003)	(i)Daiwa Bank[a] (ii)Kinki Osaka Bank[a] (iii)Nara Bank	Asahi Bank[a]	No	No	Merger
Kanto Tsukuba Bank	March 13, 2002	April 1, 2003 (April 2003)	Kanto Bank[a]	Tsukuba Bank	No	No	Merger
Nishi-Nippon City Bank	April 19, 2002	October 1, 2004 (October 2004)	Nishi-Nippon Bank[a]	Fukuoka City Bank[a]	No	No	Merger
Sumitomo Mitsui BC	December 26, 2002	March 17, 2003 (March 2003)	Sumitomo Mitsui Banking Corporation	Wakashio Bank	No	Yes	Merger
Kansai Urban Banking Corporation	April 1, 2003	*February 1, 2004* (February 2004)	Bank of Kansai[a]	Kansai Sawayaka Bank	No	No	Merger
Hokuhoku FG	May 23, 2003	September 1, 2004 (none)	Hokuriku Bank[a]	Hokkaido Bank[a]	No	No	Merger
Mitsubishi UFJ FG	July 14, 2004	*October 1, 2005* (January 2006)	Mitsubishi Tokyo Financial Group[a]	UFJ Holdings[a]	Yes	No	Merger
Kirayaka Holdings	October 29, 2004	October 3, 2005 (May 2007)	Shokusan Bank[a]	Yamagata Shiawase Bank	No	No	Merger
Kiyo Holdings	*November 20, 2004*	February 1, 2006 (October 2006)	Kiyo Bank[a]	Wakayama Bank	No	No	Merger
Yamaguchi FG	*March 19, 2005*	October 2, 2006 (none)	Yamaguchi Bank[a]	Momiji Holdings[a]	No	No	Merger
Fukuoka FG	*May 13, 2006*	April 2, 2007 (none)	Bank of Fukuoka[a]	Kumamoto Family Bank[a]	No	No	Merger

(*Continued*)

Table A1 Continued

Post-Merger Bank Name	Announcement Date	Completion Date*	Acquirer Bank	Target Bank	Mega-Merger	Cross-Type Merger	Type of Merger
Fukuoka FG	*May 3, 2007*	October 1, 2007 (none)	Fukuoka Financial Group[a]	Kyushu Shinwa Holdings[a]	No	No	Merger
Senshu Ikeda Holdings	February 21, 2008	October 1, 2009 (May 2010)	Bank of Ikeda[a]	Senshu Bank[a]	No	No	Merger
Fidea Holdings	May 13, 2008	October 1, 2009 (none)	Shonai Bank[a]	Hokuto Bank	No	No	Merger
Tomony Holdings	January 27, 2009	April 1, 2010 (none)	Kagawa Bank[a]	Tokushima Bank[a]	No	No	Merger
Kansai Urban Banking Corporation	February 26, 2009	March 1, 2010 (March 2010)	Kansai Urban Banking Corporation[a]	Biwako Bank[a]	No	No	Merger
Tsukuba Bank	*April 29, 2009*	March 1, 2010 (March 2010)	Kanto Tsukuba Bank[a]	Ibaraki Bank	No	No	Merger
Sumitomo Mitsui Trust Holdings	October 28, 2009	April 1, 2011 (April 2012)	Sumitomo Trust & Banking[a]	Chuo Mitsui Trust Holdings[a]	No	No	Merger
Juroku Bank	July 30, 2010	December 22, 2010 (September 2012)	Juroku Bank[a]	Gifu Bank[a]	No	No	Merger

[a]The bank was listed on the announcement day.
*Under completion date, actual book merger.
Notes: Italic dates were non-business days and thus shifted to the next business days in the analysis.

ACKNOWLEDGMENTS

The authors thank discussants and participants at the 2013 Japan Economics Association Meetings, Nippon Finance Association Meetings, Asia-Pacific Economic Association Meetings, and Institute for Developing Economies seminar. We would particularly like to thank, without implicating, Kaoru Hosono, Masahiro Hori, and Seiro Ito for comments on earlier drafts.

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