The Value of Banking Relationships During a Financial Crisis: Evidence from Failures of Japanese Banks

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March 1, 2002
This version August 26, 2002
Preliminary Draft

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I. Introduction

Bank failures are theorized to have adverse consequences for other firms in general, and for customers (both loan and deposit) of the failed institutions in particular. Other firms may be adversely affected, whether customers of the failed bank or not, because the failure may signal existing but yet unrecognized problems at other banks or ignite problems at other banks through spillover or contagion, and foretell adverse economic conditions for the economy in the region or nationwide. Firms that are customers of the failed institution may be relatively more adversely affected than firms that are customers of other banks because, among other things, they may lose an ongoing source of funding and need to incur the expense of search and providing financial and other information about themselves to new lenders. But all firms and bank customers may not be equally affected by bank problems and failures. The effects may be related to characteristics of the individual firm, such as its financial condition, reliance on bank credit, or industry. A number of recent studies have provided empirical evidence that bank problems and failures adversely affect the market value of a bank's corporate borrowers, both in the United States and a number of other countries (Slovin, Sushka, and Polonchek, 1993; Yamori and Murakami, 1999; Djankov, Jindra, and Klapper, 2001; Bae, Kang, and Lim, 2002; Ongena, Smith, and Michalsen, forthcoming). This paper contributes to the literature both by providing evidence on the effects of bank failures on the banks' loan customers in another country—Japan—and by examining whether the adverse effects on the failed bank's customers differ from those of other, noncustomers.

This study finds that, as in previous studies, the market value of customers of the failed banks are adversely affected at the date of the failure announcements. In addition, the effects are related to the financial characteristics of the client firms. For nonfinancial firms that have a less valuable banking relationship, the less severe the adverse impact. However, we find that these effects are not

significantly different from the effects experienced by all firms in the economy. That is, the bank failures represent "bad news" for all firms in the economy, not only the customers of the failed banks. To the extent that these results for Japan are representative, they case doubt both on the importance of bank failures on bank customer relationships and on the meaningfulness of the results of studies from other countries that find significant adverse effects for loan clients, but do not test for effects for other firms.

In recent years, an extensive literature has developed that examines the costs and benefits of bank-customer relationships, typically defined as multiple interactions between banks or bank loan officers and their borrower customers, whereby the bank gathers valuable, often confidential information about the client.[1] In the presence of asymmetric information between firms and investors, long-term banking relationships can provide Pareto-improving solutions to the financing of firms. Close ties between banks and customer firms can generate information that would otherwise be not available to investors in public markets; make it possible for banks and firms to write contracts with features that, among other things, are not feasible or enforceable in public markets or in one-time transactions; provide the flexibility and the ability to renegotiate contracts which would allow banks and firms to adjust to unanticipated shocks; allow banks to better monitor the assets and activities of clients, mitigating agency problems; certify the value of the firm to outside investors; and enable intertemporal smoothing of contract terms that enhance the value of contracts.

On the other hand, banking relationships can reduce social welfare by generating perverse incentives for banks in the enforcement of contracts, provision of follow-up financing, and financing of high risk projects with positive net present value; increasing monopoly powers of banks; and

[1] For recent reviews of the literature, see Boot (2000) and Ongena and Smith (2000a).

isolating both customer firms and their banks from timely market discipline and corporate governance.

The value of banking relationships is likely to change when the banking system as a whole is experiencing problems, particularly if there are few alternatives to bank financing. For instance, bank failures can forcefully sever or limit valuable banking relationships. At the same time, the value of an existing ongoing relationship with a healthy bank can be higher during a financial crisis since firms would have limited financing options from alternative sources. On the other hand, banks might make sub-optimal decisions during a financial crisis regarding termination of loan contracts and allow insolvent firms continue to operate in order to reduce the reported amount of nonperforming loans on their books or to inflate their reported capital. "Evergreening" of loans during the savings and loan crisis in the U.S. and repeated restructuring of loans to insolvent Japanese firms in recent years are some examples of such sub-optimal termination decisions. Problems in the banking sector can also result in fewer profitable investments by firms that are highly dependent on bank financing.

A number of papers provide empirical evidence on the costs and benefits of banking relationships. James (1987), Billett et. al. (1995), and Lummer and McConnell (1989) report a special role of banks in lowering the cost of capital for firms with limited access to alternative sources of financing. Petersen and Rajan (1994), Berger and Udell (1995), and Cole (1998) find the value of banking relationships to small businesses in the U.S., which typically face greater information problems than larger firms and have limited access to public capital markets to be particularly important. Several papers present evidence on the value and the nature of banking relationships in other countries where banks play a greater role in financing of firms than in the United States. Hall and Weinstein (2000), Hoshi, Kashyap, and Scharfstein (1990 and 1991), Kaplan

and Minton (1994), Kang and Shivdasani (1995), Morck and Nakamura (1999), Morck, Nakamura, and Shivdasani (2000) and Weinstein and Yafeh (1998) focus on banking relationships in Japan. Degryse and Van Cayseele (2000), Detragiache et. al. (2000), Elsas and Krahnen (1998), Foglia et. al. (1998), and Ongena and Smith (2000b), examine banking relationships in Europe. These studies provide evidence that banking relationship enhance firm value by generating exchange of information that facilitates finance, provide corporate governance, enable intertemporal smoothing of loan prices, and provide liquidity insurance to borrowers during periods of financial distress. However, the studies also present evidence that banking relationships can, at times, involve costs, in terms of lower growth experienced and higher interest rates paid by firms with close banking relationships.

Several other papers focus on the effects of problems or failures of individual banks or multiple banks on banking relationships. Chiou (1999) reports that Japanese firms that were Daiwa Bank customers suffered negative excess returns following the announcement of Daiwa's trading scandal in 1995. Gibson (1995 and 1997) shows that investments at bank-dependent Japanese firms were lower for firms with lower-rated main banks. Kang and Stulz (2000) provides evidence that Japanese firms that were more dependent on Japanese bank loans performed relatively better when their banks were doing well in the 1980s and more poorly when their banks were performing poorly in the 1990s after the bubble in asset prices collapsed.

Slovin, Sushka, and Polonchek (1993) examine the stock price reactions of client firms of Continental Illinois Bank during its period of economic insolvency leading up to its bailout by the FDIC in 1984. They find that firms with known lending relationships with Continental Illinois experienced significantly negative abnormal returns during the banking firm's financial difficulties before its resolution but significant positive returns at the announcement of the bailout by the FDIC.

However, the positive abnormal returns over the bailout event window were smaller than the aggregate negative abnormal returns over the event period immediately before the bailout. As a result, Continental loan client firms experienced significant negative abnormal returns on average as a result of the banking firm's financial distress. Yamori and Murakami (1999) extend Slovin, Sushka, and Polonchek (1993) approach to the failure of a Japanese bank—Hokkaido Takushoku Bank in 1997. The authors find that firms that listed the failed bank as their most important bank experienced the largest negative stock market reaction at the bank failure announcement. Djankov, Jindra, and Klapper (2001) also extend Slovin, Sushka, and Polonchek (1993) by examining the stock market valuation effect of the insolvency of 31 banking organizations in East Asia (Indonesia, Korea, and Thailand) on borrowing firms. They report that a bank's insolvency announcement, preceding liquidation, led to a significant negative stock market reaction. On the other hand, nationalization announcements, preceding recapitalization and new management, are associated with positive abnormal returns.

Bae, Kang, and Lim (2002) examine the durability of bank relationships in Korea. They find that bank financial distress is associated with negative abnormal returns for client firms, and the announcement effects are greater for the bank-dependent and financially weak firms of the weakest banks. This suggests that the combination of bank and borrowing firms conditions determines the impact of bad news about a bank on its customers. Ongena, Smith, and Michalsen (forthcoming) examine impact of bank distress announcements in Norway on bank client firms. The authors find that the impact of these announcements on bank client firms were small and temporary and did not statistically differ from their impact on unrelated firms. The authors also find that more liquid firms—as measured by access to unused bank funds and equity issues prior to the banking crisis—had higher abnormal returns.

We add to this literature in this paper by examining the impact of the failure of three large Japanese banks in 1997 and 1998 on the market valuation of nonfinancial firms. Following Slovin, Sushka, and Polonchek (1993), we estimate the impact of the failure announcements on the market valuation of the client firms of the failed banks. We extend the analysis, however, by also estimating the impact of the failure announcements on all firms including the clients of surviving banks. Most previous studies have not analyzed this aspect of bank financial distress.[2] By also examining the stock valuation of the failure announcements for firms that did not have relationships with the failed institutions, we can identify any differences in the effects on clients and non-clients of the failed banks. This is particularly important in order to verify whether any effects estimated for the failed banks' customers reported in the previous studies differ from those experienced by all bank customers. In addition, we relate the estimated abnormal returns for both sets of nonfinancial firms to variables that captures the value of banking relationships. Prior studies suggest that the value of banking relationships should depend on firm characteristics, such as the ability to access alternative sources of funding, profitability, and investment opportunities. The stronger the financial health of a firm, the less severe its stock market reaction should be at the announcement of a bank failure. Therefore, if bank failures weaken or destroy valuable banking relationships and this effect is reflected in the abnormal returns, we should observe an inverse correlation between firm characteristics that increase the value of banking relationships and the magnitude of the effect of the failure announcements on the market value of firms.

[2] To the best of our knowledge, Ongena, Smith, and Michalsen (forthcoming) is the only other study that examines the impact of large bank distress on clients of other banks. Slovin, Sushka, and Polonchek (1993) examine whether the type of lending arrangement (providing a direct loan, or being the lead syndicator versus participating in another's bank loan) determines the magnitude of the client firm's stock market reaction at a bank's financial distress announcement. They find that direct or lead lending relationships have a greater negative impact on abnormal returns than participating in other banks' loans.

The next section of this paper describes how bank failures can potentially influence the stock market value of bank borrowers and other firms. The third section describes the data and methodology. The empirical results for the effects of the bank failures on their loan customers and other firms is reported in section four. The final section summarizes the findings and offers conclusions. The Appendix provides a brief overview of the events leading up to the three failures.

II. The Impact of the Failures

We examine the market response at the failure announcements of three important Japanese banks in 1997 and 1998—Hokkaido Takushoku Bank on November 17, 1997, the Long-Term Credit Bank of Japan (LTCB) on October 23, 1998, and the Nippon Credit Bank (NCB) on December 13, 1998. A defining characteristic of all these three failures was that the magnitude of bad loans and valuation losses previously disclosed by the failed institutions had been significantly understated, concealing the true extent of their problems. The release of this new information might call into questions the availability of funds for client firms, especially for those experiencing financial distress and/or those that use bank loan agreements as a major source of liquidity and certification of value. Second, the failures might also have signaled a regulatory shift to increased probability of closure in the future, particularly for the riskier banks (Brewer et. al., forthcoming; Spiegel and Yamori, 2000). In either of these cases, if banking relationships enhance the value of bank clients, we would expect clients of both announcing and surviving banks to be adversely affected by the failures.

Third, the three failures revealed a significant change in the institutional and government support structure of Japanese financial institutions. Traditionally, weak or troubled institutions could previous rely on implicit and explicit government support, capital injections and new loans from financially or otherwise affiliated companies, or "rescue mergers" with a stronger institution. The unwillingness of other banks to provide support suggests that the financial distress might extend

beyond the failed bank and adversely affect the whole economy. Thus, a bank failure could have implications for the availability of bank credit for a nonfinancial firm irrespective of the identity of its lending bank. Finally, failed banks in Japan were not closed and put into receivership. Two of our three failed banks were nationalized and kept in operation. The third bank was taken over by several other banks. If these changes cause the "new" banks to provide their loan customers with unfavorable terms compared to the old banks, then the stock market valuation effects should be similar to those observed in Slovin, Sushka, and Polonchek (1993). On the other hand, if the nationalizations are perceived by the financial market as an attempt by the Japanese government to ensure that the client firms have continued assess to credit, the stock market reactions' of clients of the nationalized banks should be non-negative.

It is also possible that the bank failures have no impact on the valuation of their clients, if it was common knowledge that the three banks were experiencing severe problems prior to their failures. Therefore, if the failures were fully anticipated by investors and already priced in the stock prices of bank clients, we would expect no significant reaction to the failure announcements. However, previous papers by Brewer et. al. (forthcoming) and Spiegel and Yamori (2000) show that these failures had a significant adverse impact on the market valuation of surviving banks, indicating that the events were not fully anticipated.

Lastly, previous studies suggest that the value of banking relationships are related to the ability of firms to access alternative sources of funding, the degree of information asymmetry between firms and investors, the future investment opportunities of firms, their profitability, and other firm characteristics. If the Japanese bank failures changed the value of banking relationships, we would expect the magnitude of the impact of these failures to be positively correlated to firm characteristics that enhance the value of the relationships.

III. Data and Methodology

Our empirical analysis is conducted in two parts. In the first part, we estimate the responses of industrial firms to the three bank failures. We compare the responses of firms that were clients of the three failed banks to the responses of a control set of firms that were clients of the surviving banks.

Our methodology closely follows the event study methodology used in previous papers examining the response of stock prices to changes in the regulatory environment and announcements. Specifically, the daily stock returns of firms are examined to identify any abnormal performance on or around the announcement of the three failure events. The impact of the events is measured by estimating a standard multivariate regression model, similar to that used by Binder (1988), Brewer et. al., forthcoming, Karafiath, Mynatt, and Smith (1991), Malatesta (1986), Millon-Cornett and Tehranian (1990), and Schipper and Thompson (1983), among others. The model takes the following form:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \sum_{k=-1}^{1} \gamma_{ik} D_k + \varepsilon_{it,} \qquad \textbf{(1)}$$

where R_{it} is the stock return of firm i on day t; α_i is the intercept coefficient for firm i; R_{mt} is the market index for day t; β_i is the market risk coefficient for firm i; D_k is a binary variable that equals 1 if day t is equal to the event day or window k ($k \in [-1,1]$), zero otherwise; γ_{ik} is the event coefficient for firm i; and ε_{it} is a random error. Equation (1) is estimated as a system of separate equations for the individual firms in the sample using seemingly unrelated regressions, which permit the impact of the events examined and the variance of the residuals to vary across firms. The estimated parameters γ_{ik} capture any daily intercept shifts on event day (window) k and provide an

estimate of abnormal (excess or unexpected) returns associated with the failure announcement on day (window) *k*.

The announcement dates of the three failures were obtained through a search of *the Wall Street Journal*, *Reuters* news wire, *Newscast* news service, and the *Knight Ridder* business wire. These include news articles from Japanese and other international news sources. All dates are Japanese dates. If the failure announcement was made during a trading day in Japan, that date is used as the event day [0]. If an announcement was made after the market was closed or over the weekend, we use the next trading date as event date.[3] For the Long-Term Credit Bank we used the date of the first news stories that cited official government sources that the bank was in imminent danger of being nationalized. Daily stock prices and returns were obtained from the University of Rhode Island's Pacific Basin Capital Markets Research Center (PACAP) 1999 database. Market returns are measured by the TOPIX index, which includes seasoned shares of over 1,000 major companies (First Section) traded on the Tokyo Stock Exchange, and were obtained from PACAP.

The values of the parameters in equation (1) are estimated daily over a sufficiently long observation period before and after each event date to obtain meaningful results, but one short enough not to be affected by the other events examined in the study. The length of these sample periods—from 198 trading days before the first event date to 10 days after the last event date—conforms closely to those used in previous studies (e.g., MacKinlay, 1997; Smirlock and Kaufold, 1987). However, because the two events in 1998 are reasonably close to one another, we use a common estimation period for these events. To reduce the effects of specific events on subsequent events in the common estimation period, equation (1) is modified so as to permit a shift in both the

[3] Consequently, the event dates for LTCB (October 19, 1998) and NCB (December 14, 1998) differ from the announcement dates.

intercept (α) and the market index coefficient (β) after the first failure in each estimation period as follows (Binder and Norton, 1999):

$$R_{it} = \alpha_i + \beta_i R_{mt} + \alpha_i P + \beta_i P R_{mt} + \sum_{e} \sum_{k=-1}^{1} \gamma_{ik,e} D_{k,e} + \varepsilon_{it,} \qquad \textbf{(1')}$$

where e is the number of events in 1998 (e =2), and P is a binary variable that identifies post-event periods; i.e., P is equal to 1 after the LTCB failure, zero otherwise.

We examine the individual firms' estimated daily abnormal returns— γ_{ik} —for each event for two groups of firms: the clients of failed banks and the control group of the clients of surviving banks. To ensure that the estimates of parameters in equations (1) and (1') are based on sufficient data, we exclude from our sample any firm that did not have daily stock returns for at least one-half of the estimation period. Following Gibson (1995 and 1997) and Yamori and Murakami (1999), we identify the clients of the three failed banks from the Autumn 1997 and Autumn 1998 issues of the *Japan Company Handbook (JCH)*, which identifies the banks used by each company. We identify firms as clients of a failed bank if the failed bank appears anywhere on the bank list, irrespective of its rank.[4] All other firms included in the 1999 PACCAP database are identified as the clients of the surviving banks and are grouped in the control sample. Some firms are identified as clients of both the LTCB and NCB. Our sample for the failure of Hokkaido Takushoku Bank in 1997 includes 70 firms identified as clients of the failed bank and 1,214 firms identified as clients of surviving banks. For the failures in 1998 the sample includes 197 firms that were clients of LTCB only, 60 firms that

[4] Yamori and Murakami (1999) note that firms typically list the most important bank first. Thus, we also replicate our analysis under more conservative definitions of a client. Specifically, we identify firms as clients of a failed bank if the failed bank is among the top three banks in the list, and alternatively, if the failed bank is the first bank in the list.

were clients of NCB only, 29 firms that were clients of both LTCB and NCB, and 926 firms that were clients of the surviving banks.[5]

If the failures of the three banks severed or limited valuable banking relationships and had unanticipated negative implications for the value of the firms, we would expect the abnormal returns of client firms during the event window to be negative and statistically significant. If the events revealed no new information or were considered irrelevant by the shareholders of firms, the abnormal returns would be statistically indistinguishable from zero. To distinguish among the two scenarios, we test the hypothesis H_0^1, that the cross-sectional average of individual abnormal returns for the clients of the failed banks is equal to zero for each event, *e*, i.e.,

$$H_0^1 : \frac{1}{N_1} \sum_{i=1}^{N_1} \gamma_{i,e} = 0$$

where N_1 is the number of clients of the failed bank.

We also conduct similar tests for the clients of surviving banks in the sample to determine if the failures had a significant impact on the stock market valuations of these firms. That is, we test the hypothesis:

$$H_0^2 : \frac{1}{N_2} \sum_{j=1}^{N_2} \gamma_{j,e} = 0$$

where N_2 is the number of firms that were clients of surviving banks.

[5] It is possible that our samples are subject to selection bias if firms with certain characteristics, for instance firms that are in relatively better financial condition, broke off their relationships with weak banks prior to their failure. We checked for the possibility of this type of selection bias by examining the bank lists of a random sample of firms three years prior to the failure dates. It appears that banking relationships in Japan as reported in the Japan Company Handbook are very stable. There were no instances in our random check where the identities of the banks in the list three-years prior to the failure were different from those one year prior to the failure.

To determine whether the abnormal returns of the failed-bank clients are the same as those of the clients of surviving banks, we test the hypothesis that the average abnormal return for the clients of the failed banks equals the average abnormal return of the clients of the surviving banks. That is, we test the hypothesis:

$$H_0^3 : \frac{1}{N_1}\sum_{i=1}^{N_1}\gamma_i = \frac{1}{N_2}\sum_{j=1}^{N_2}\gamma_j$$

In addition, we examine the cross-sectional median of abnormal returns and test the hypothesis that the number of firms with negative abnormal returns is equal to 50 percent of each sample against the alternative hypothesis that the number of firms with negative abnormal returns comprise more than 50 percent of the sample. A rejection of the null hypothesis for clients of the failed banks would be consistent with the hypothesis that the failures resulted in the severance of valuable banking relationships. A rejection of this hypothesis for client firms of surviving banks would be consistent with the hypothesis that the failures had negative spill-over effects on the remainder of the economy or revealed adverse information about the surviving banks and/or their clients.

Lastly, we test the hypothesis that the clients of the failed and surviving banks belong to populations with the same distribution using the Mann-Whitney-Wilcoxon test. A rejection of this hypothesis would be consistent with the notion that the failures had a different impact on the clients of the failed banks than on the rest of the economy.

In the second part of our analysis, we examine whether the abnormal returns estimated for the firms are related to their financial characteristics. To do this, we pool the abnormal returns for the three-day event window [-1, +1] for each firm, $\gamma_{[-1,1],i}$, across all three events. Hence, the final sample can include up to three observations for each firm: one measuring the firm's abnormal

returns at the failure of announcement of Hokkaido Takushoku Bank, and two other observations for the firm's abnormal returns at the failure announcements of LTCB and NCB.

We then relate these abnormal returns to variables that capture the value of banking relationships and a set of control variables as follows:

$$\gamma_{[-1,+1],i} = \alpha + \phi COND_i + \psi X_i + \delta CL_i + \lambda(CL_i \; x \; COND_i) + \theta(CL_i \; x \; X_i) + \sum_j \vartheta_j DIND_j + \mu_{it,} \qquad \textbf{(2)}$$

where CL_i is a binary variable that identifies the clients of the failed banks and is equal to one if firm *i* is a client of the failed bank, zero otherwise; $COND_i$ is a variable that describes the financial condition of firm *i* at the time of the event; and X_i is a vector of variables that control for other characteristics of the firms. The interaction terms (*CL x COND* and *CL x X*) are included to examine whether the abnormal returns of clients of failed banks are more sensitive to firm characteristics than the abnormal returns of clients of surviving banks. Six industry binary variables (DIND) are included in equation (2) to account for unobserved industry "fixed effects."[6]

We estimate equation (2) using ordinary least squares with White's (1980) adjustment for heteroskedasticity.[7] In our model, we use firm size as measured by total assets (TA), firm age (AGE) and future profit opportunities as measured by the ratio of market value of assets to book value of assets (TOBQ) as control variables and five alternative measures of the financial condition of firms: the ratio of loans to total assets (LNS/TA); the ratio of book value of equity to total assets (EQ/TA); the average return on assets over the previous five years (ROA); the average return on equity over

[6] For a discussion of the existence of "other effects" in pooled cross-sectional time-series analysis see Balestra and Nerlove (1966).

[7] The models reported in the paper assumes that the financial condition of firms are exogenously determined. As a robustness check, we relaxed this assumption and allowed the five variables measuring firm financial condition to be determined endogenously by the other three firm characteristics. In the following discussion of the results, we report any instances where the results from this instrumental variables estimation differed from the results reported in the paper.

the previous five years (ROE); and a measure of liquidity—the ratio of cash and securities to total assets (LIQ).

Asset size serves as a proxy for the potential information asymmetries faced by firms when seeking external financing (Petersen and Rajan, 1994). Larger firms are likely to be better known among market participants and tend to have easier access to external financing.[8] Hence we would expect stock returns of larger firms to be less adversely affected by the bank failures. We include firm age because previous research (Petersen and Rajan, 1994) suggests that older firms that have a more established reputation tend to have easier access to external financing and hence be less adversely affected by bank failures. A high ratio of market to book value of assets-- the Tobin's Q—suggests more growth opportunities. Barclay and Smith (1997) find that firms with more growth opportunities have greater financing choices. Hence, we expect that firms with more growth opportunities should be less affected by the loss of a banking relationship. To allow for nonlinear as well as linear relationships between abnormal returns and AGE and TOBQ, we also specify their squared terms, AGE^2 and $TOBQ^2$.

The ratio of loans (both from banks and other intermediaries) to total assets captures the extent to which firms rely on intermediated credit for external funding. Firms with a greater amount of intermediated credit are likely to be more bank dependent and thus, less able to find new external sources of financing. We expect that the abnormal returns should be negatively correlated with the ratio of loans to total assets.

The capitalization ratio measures firm leverage. Higher leveraged firms are perceived as more risky. In addition, given the adverse selection problem associated with external financing, a

[8] The correlation between asset size and access to external financing is likely to be stronger in Japan where some of the eligibility requirements for issuing corporate bonds on the capital market are based on firm size.

highly levered nonfinancial firm may face higher interest costs and/or other fees to replace an existing banking relationship or obtain another external monitor after the failure of the bank with which it has a relationship. Thus, the capitalization ratio should be positively correlated with nonfinancial firms' abnormal returns.

We use two profitability measures to capture firm performance: return on assets (net income divided by book value of total assets) and return on equity (net income divided by book value of equity), averaged over the five years prior to the failures. More profitable firms should have more financing options. We expect that firms with greater profitability should be less negatively affected by the loss of a banking relationship or bank financial distress in general.

The ratio of cash plus investment securities to total assets measures the firm's liquidity or amount of internal funds available to the firm. Firms with relatively more internal funds should be less dependent on external financing, and, therefore, less affected by bank failures. Because the financial condition variables are highly correlated, we specify only one at a time in estimating equation (2).

All variables on the financial condition and other characteristics of firms were obtained from the PACAP 1999 database and are measured as of the end of the fiscal year prior to each failure.

If the failure events had a significant impact on the stock market valuation of the firms which was systematically related firms financial characteristics, we would expect the coefficients ϕ, λ, ψ, and θ in equation (2) to be significantly different from zero. Our primary concern is the coefficients ϕ and λ on the *COND* and *CL x COND* variables, respectively. In the empirical section, we test the hypotheses

$$H_0^4 : \phi + \lambda = 0$$

for the clients of the failed banks, and

$$H_0^5 : \lambda = 0.$$

for the clients of the surviving banks.

To determine whether the relationship between abnormal returns and financial characteristics of firms differed systematically across clients of failed and surviving banks, we also test the hypothesis:

$$H_0^6 : \phi = 0.$$

IV. Empirical results

Table 1 provides estimates of abnormal returns for several portfolios of bank customers at the announcement dates of the three bank failures. Estimates reported are the mean and median of the individual equations of each firm. Separate results are reported for bank customers that are clients of one of the three failed banks and clients of one of the surviving banks. For the LTCB and NCB failures, we also report results for a portfolio of bank customers that list both failed banks as their primary banks. Thus, there are five different failed bank client portfolios (3 single failed banks and 2 multiple failed banks) and three surviving bank client portfolios. Table 1 also provides test statistics for three hypotheses for all three failure events: 1) that the abnormal returns for the portfolio of client firms equal to zero for each event; 2) that the portfolio abnormal returns of failed bank clients are equal to that of surviving bank clients; and 3) that 50 percent of the failed banks' client firms have negative abnormal returns on and around each of the three events. The first column of table 1 reports the results of the estimated abnormal returns of individual firms for day [-1] of each event window. The second column reports the estimates for day [0] of the event window. The third column reports the estimates for day [+1], and the fourth column reports the results for the [-1, +1] window.

Of the 20 estimated abnormal mean returns of the failed bank clients (four event windows for five different failed bank client portfolios), 15, or 75 percent, have the expected signs but only 8 are

statistically significant. Do these effects significantly different from those of clients of surviving banks? The results in table 1 suggest that they are not. Of the 12 estimated abnormal returns of the surviving bank clients, 9, or 75 percent, have the expected negative sign and all are statistically significant. The statistics in the rows labeled "T-test for equality of means" test the hypothesis that the impact of the announcements was equal across the two different client portfolios. None of the test statistics allow us to reject this hypothesis for any of the event windows. A similar conclusion is obtained using the "Wilcoxon" test of the hypothesis that the failed bank client firm and surviving bank client firm samples are from populations with the same distribution. This suggests that bank failures have meaningful adverse effects on the stock market valuation of surviving as well as failed bank client firms.

The median abnormal return for failed bank clients over the three day [-1, +1] window was negative for each of the five portfolios. To determine whether client firms with negative abnormal returns statistically outnumbered those with positive returns, we computed the proportion of positive abnormal returns minus 0.5 divided by the standard deviation of a binomial distribution (the "sign test"). For the [-1, +1] window, the sign test indicates that the number of client firms with negative abnormal returns exceeded those with positive returns in 4 of the 5 cases for failed bank sample of firms. The sign test shows that the number of client firms of surviving banks with negative abnormal returns exceeded those with positive returns in all three cases. Thus, our results suggest that bank failures serve as bad news for all firms in the economy, not just those of failed banks. Because the whole banking sector in Japan was experiencing financial distress during the 1990s, bank dependence is costly for all firms regardless of the identity of their primary bank (Kang and Stulz, 2000).

Cross-section tests of the relationship between firms financial characteristics and abnormal returns

Failure announcements need not have equal effects on all bank client firms. Indeed, theory suggests that the announcement effects should be related to the financial and other characteristics of the firms. In this section we explore this relationship by examining the cross-sectional correlation between the individual failed bank client firm abnormal returns and its financial characteristics. Table 2 provides summary statistics for the financial and other variables that we use in estimating the cross-section regression equation. For the Hokkaido Takushoku Bank, there appears to be no statistically significant differences in capitalization, dependence on intermediated debt, profitability, liquidity, and age, between firms that are clients of the failed bank and those that are clients of surviving banks. However, client firms are smaller and have fewer future profit opportunities (as measured by Tobin's Q) than clients of other banks.

On the other hand, there are more significant differences between the characteristics of clients of LTCB and NCB and clients of surviving banks. As indicated in panel B of table 2, failed bank client firms are larger, less capitalized, more dependent on intermediated debt, are less profitable, and less liquid. There are, however, no significant differences between failed bank client firms and surviving bank client firms in terms of future profit opportunities and age. A comparison of the clients of LTCB and NCB separately ("Clients of LTCB only, "Clients of NCB only," and "Clients of both banks") indicates that, except for size, the significant differences persist in these smaller client groups as well.

Regressions of abnormal returns on client firms financial characteristics

The cross-section regression results are reported in table 3.[9] The five panels in the table report the results of estimating equation (2) with one of the five alternative measures of the financial

[9] Industry binary variables are not included in table 3. The results are available from the authors upon request.

condition of firms. In each panel, columns one and two report the coefficient estimates for client firms of failed and surviving banks, respectively. Column three reports the significance levels for the test that the coefficients for clients of failed and surviving banks are equal.

If bank failure adversely affects valuable relationships, we should expect variables positively correlated with information problems, and hence bank dependence, to be negatively correlated with abnormal returns. Furthermore, we would expect the correlation to be stronger for failed bank client firms.

The results in table 3 are broadly consistent with the prediction that firms for which banking relationships are more valuable suffer more at announcement from the failure of their bank. Clients of failed banks that relied more on intermediated debt, those that were less profitable, or less capitalized had more negative reactions to the failure announcements. For the ratio of intermediated to total debt and return on assets, these effects were statistically significant.

Similarly, client firms of surviving banks for which banking relationships are likely to be more valuable experienced more negative abnormal returns at announcement of the three bank failures. In particular, firms that relied more heavily on intermediated debt, those that had lower capital ratios, and lower profitability as measured by ROA and ROE had significantly lower abnormal returns.

However, in none of the five models, can we reject the hypothesis that the coefficients on the COND variables for the clients of failed banks and surviving banks are equal. Hence, the results show no support for the prediction that the relationship between abnormal returns and financial characteristics is stronger for the clients of failed banks.

The coefficients on the control variables (TA, AGE, TBQ) indicate that firm size is positively and significantly correlated with the abnormal returns of the failed bank clients in all five models.

Hence, consistent with our predictions, larger clients suffered less from the failure of their banks. Moreover, we can reject the hypothesis that the correlation between size and abnormal returns for the clients of failed and surviving banks is equal in all five models. The magnitudes of the coefficients on firm size for the two groups indicate that the abnormal returns of the failed-bank clients are two to three times as large as those of the surviving-bank clients. These results suggest that clients of failed banks that had greater access to external financing experienced less severe stock market reactions to the failure announcements than the clients of surviving banks with similar access.

The sign and magnitude of coefficients for AGE and its squared term in table 3 indicate that older firms suffered less from the failure announcements than younger firms, consistent with our expectations. In most cases, the coefficient on AGE is negative and significant and the coefficient on AGE^2 is positive and significant. When one calculates the marginal effect of age on abnormal returns, the age at which the relationship between abnormal returns and age turn from negative to positive ranges between 17 and 36 years. Hence, for young firms (less than 36 years old at most), abnormal returns are negatively correlated with age. However, for mature firms (more than 36 years old), abnormal returns are positively correlated with age. Since the sample mean for age is about 55 years, for most of the firms in the sample, the net impact of AGE is positive.

Firms' future profit opportunities, as measured by TOBQ and its squared term, do not have any statistical significance in explaining the cross-sectional variation in the abnormal returns of failed bank clients. On the other hand, consistent with our predictions, clients of surviving banks that had more future opportunities were less severely affected by the failure announcements, but this effect was declining in the level of TOBQ.

Overall, the results in table 3 show support for the hypothesis that the abnormal returns of firms at the announcement of the three bank failures are correlated with the financial and other characteristics of firms. Moreover, the directions of these correlations are consistent with our predictions. However, table 3 offers no evidence that the relationship between firm characteristics and abnormal returns is stronger for the clients of failed banks relative to the clients of surviving banks. Hence, the three failures had a more sever adverse impact on the valuations of all client firms for which banking relationships are more valuable, regardless of the identity of their banks.

V. Conclusions

Bank failures are theorized to have adverse consequences for other firms, particularly if these firms are clients of the failed institutions. A number of recent studies have provided empirical evidence that bank problems and failures adversely affect the market value of a bank's corporate bank borrowers, both in the United States and a number of other countries. This paper contributes to the literature both by providing evidence on the effects of bank failures on the banks' loan customers in another country—Japan—and by examining whether the adverse effects on the failed bank's customers differ from those on the clients of surviving banks.

We examine the stock market reaction of over 1,000 Japanese firms to the failure of announcements of the Hokkaido Takushoku Bank in 1997, the Long-Term Credit Bank of Japan and the Nippon Credit Bank in 1998. We find that, as in previous studies, the market value of customers of the failed banks are adversely affected at the date of the failure announcements. In addition, the effects are related to the financial characteristics of the client firms. Firms that have greater access to alternative sources of funding experience a less severe adverse impact from bank failure announcements. However, we find that these effects are not significantly different from the effects

experienced by all firms in the economy. That is, the bank failures represent “bad news” for all firms in the economy, not just for the customers of the failed banks.

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Table 1. Estimated of abnormal returns for failed and surviving bank client firms

This table reports statistics for the distribution of abnormal returns for the clients of the three failed banks and the control group. For each firm, excess return at event date k is the coefficient γ_{ik} in the following model, estimated by seemingly unrelated regression:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \sum_{k=-1}^{1} \gamma_{ik} D_k + \varepsilon_{it},$$

For the 1998 failures, the above market model is expanded to allow for post-failure shifts in both the alpha and market beta coefficients. The rows labeled "Mean" report the cross-sectional average of excess returns for the appropriate sample and test whether the mean excess return is significantly different from zero. The rows labeled "Median" report the median excess returns for the relevant sample and the significance level for the one-sided sign test H_0: median =0 and H_a: median < 0. The two rows labeled "Wilcoxon test" and "T-test for equality of means" report tests for the equality of the distributions of excess returns for clients of the failed banks and the clients of surviving banks. The rows labeled "Wilcoxon test" reports the z-statistic and its significance level for the hypothesis that the failed bank clients and other bank clients are from populations with the same distribution. The rows labeled "T-test for equality of means" report the t-statistic for the equality of means across the two samples and its significance level. '***', '**', and '*' indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Hokkaido Takushoku Bank failure (November 17, 1997)

	Event windows			
	-1	0	+1	[-1, +1]
Hokkaido Takushoku Bank client firms (N= 70)				
Mean	1.002**	-0.733	-0.606	0.170
Median	0.517	-0.588*	-0.858**	-0.330
Surviving banks client firms (N= 1214)				
Mean	0.377***	-0.650***	-0.183	-0.115**
Median	0.380	-0.629***	-0.266***	-0.034
Tests for client effects				
Wilcoxon test	-1.24	0.25	1.33	0.12
T-test for equality of means	-1.64	-0.17	0.90	-0.57

Table 1. Estimated of abnormal returns for failed and surviving bank client firms (cont'd)

Panel B. LTCB failure (October 23, 1998)

	Event windows			
	-1	0	+1	[-1, +1]
LTCB client firms (N=197)				
Mean	-2.288***	-0.471*	-1.115***	-1.324***
Median	-2.288***	-0.539**	-1.203***	-1.156***
LTCB and NCB client firms (N=29)				
Mean	-3.877***	0.862	-0.159	-1.042
Median	-3.502***	0.451	-0.592	-1.744*
Surviving banks client firms (N= 926)				
Mean	-2.142***	-0.611***	-0.913***	-1.226***
Median	-2.061***	-0.728***	-1.013***	-1.185***
Tests for client effects, LTCB clients only				
Wilcoxon test	0.87	-1.02	1.25	0.38
T-test for equality of means	0.51	-0.59	0.43	0.85
Tests for client effects, both LTCB and NCB clients				
Wilcoxon test	2.23**	-2.60***	-0.31	0.30
T-test for equality of means	2.53**	-2.36**	-1.20	-0.49

Panel C. NCB failure (December 14, 1998)

	Event windows			
	-1	0	+1	[-1, +1]
NCB client firms (N=60)				
Mean	-0.163	0.118	-1.345***	-0.497**
Median	0.279	-0.216	-0.532**	-0.424**
LTCB and NCB client firms (N=29)				
Mean	0.460	-0.698	-1.228**	-0.522
Median	0.501	-0.207	-1.328***	-0.364**
Surviving banks client firms (N=926)				
Mean	-0.355***	-0.214	-0.454***	-0.342***
Median	-0.312***	-0.212**	-0.329***	-0.237***
Tests for client effects, NCB clients only				
Wilcoxon test	-1.21	-0.25	1.78*	1.15
T-test for equality of means	-0.47	-0.60	2.17**	0.78
Tests for client effects, both LTCB and NCB clients				
Wilcoxon test	-1.79*	0.46	2.74***	0.94
T-test for equality of means	1.40	0.61	1.35	0.64

Table 2. Summary statistics of financial characteristics for failed and surviving bank client firms

This table presents financial characteristics of failed and surviving bank client firms at the end of March of the each failure year. Failed bank clients are defined as firms that have Hokkaido Takushoku Bank, LTCB or NCB anywhere on the References list. Tobin's Q is the ratio of firm market value (market value of equity plus total assets minus book value of equity) to total assets. ROA is net income divided by total assets, and ROE is net income divided by book value of equity. In the column labeled "mean," '***', '**', and '*' indicate statistical differences in the mean values of the variables for failed and surviving bank client firms at the 1%, 5%, and 10% levels, respectively.

Panel A. Hokkaido Takushoku Bank failure (November 17, 1997)

	Mean	St. Dev	Min	Max
Total Assets (trillion yen)				
All firms	0.27	0.65	0.00	11.18
Nonclients	0.27	0.67	0.00	11.18
Clients	0.14	0.18	0.01	1.04
Equity / Total Assets (%)				
All firms	42.40	20.01	-48.37	94.54
Nonclients	42.58	20.11	-48.37	94.54
Clients	39.34***	18.20	2.83	77.61
Loans / TA (%)				
All firms	20.05	17.81	0.00	130.82
Nonclients	20.04	17.90	0.00	130.82
Clients	20.15	16.41	0.00	66.25
ROA (five-year average, %)				
All firms	1.19	2.31	-21.29	11.32
Nonclients	1.19	2.32	-21.29	11.32
Clients	1.03	2.05	-7.97	8.52
ROE (five-year average, %)				
All firms	1.88	7.24	-53.27	15.91
Nonclients	1.90	7.19	-53.27	15.91
Clients	1.45	8.11	-49.09	13.00
(Cash and Securities) / Total Assets (%)				
All firms	16.01	10.93	0.22	75.00
Nonclients	16.03	10.96	0.22	75.00
Clients	15.68	10.45	1.96	55.78
Tobin's Q				
All firms	1.30	0.40	0.59	5.60
Nonclients	1.31	0.40	0.59	5.60
Clients	1.20***	0.23	0.84	1.87
Age (years)				
All firms	55.84	16.58	9.00	116.00
Nonclients	55.91	16.70	9.00	116.00
Clients	54.74	14.31	17.00	83.00

Table 2. Summary statistics of financial characteristics for failed and surviving bank client firms (cont'd)

Panel B. LTCB and NCB failures (October 23, 1998 and December 14, 1998)

	Mean	St. Dev.	Min.	Max.
Total Assets (trillion yen)				
All firms	0.279	0.667	0.005	10.839
Nonclients	0.259	0.648	0.005	10.839
Clients	0.344*	0.719	0.005	7.025
LTCB clients only	0.386*	0.823	0.005	7.025
NCB clients only	0.231	0.378	0.012	1.892
Clients of both banks	0.290	0.418	0.032	1.904
Equity / Total Assets (%)				
All firms	43.63	20.62	1.50	94.07
Nonclients	45.49	20.61	2.50	94.07
Clients	37.59***	19.49	1.50	93.45
LTCB clients only	39.45***	19.53	2.96	88.75
NCB clients only	34.54***	17.64	6.27	93.45
Clients of both banks	31.22***	21.25	1.50	82.06
Loans / TA (%)				
All firms	20.12	18.37	0.00	83.41
Nonclients	17.74	17.32	0.00	78.09
Clients	27.83***	19.56	0.00	83.41
LTCB clients only	26.51***	18.99	0.00	83.41
NCB clients only	27.77***	19.78	0.00	76.58
Clients of both banks	36.99***	21.13	0.00	73.06
ROA (five-year average, %)				
All firms	1.16	2.46	-32.86	10.69
Nonclients	1.24	2.57	-32.86	10.69
Clients	0.88**	2.04	-10.69	7.01
LTCB clients only	1.10	1.90	-5.45	7.01
NCB clients only	0.54	2.30	-10.69	5.29
Clients of both banks	0.08*	2.17	-5.64	5.23
ROE (five-year average, %)				
All firms	1.57	7.63	-61.49	15.05
Nonclients	1.80	7.54	-61.49	15.05
Clients	0.84*	7.91	-49.39	11.21
LTCB clients only	1.57	7.05	-49.39	11.21
NCB clients only	0.77	7.28	-31.57	11.05
Clients of both banks	-3.93***	12.22	-39.96	7.22
(Cash and Securities) / Total Assets (%)				
All firms	15.45	10.79	0.09	74.68
Nonclients	16.41	11.16	0.31	74.68
Clients	12.33***	8.80	0.09	59.21
LTCB clients only	12.74***	9.01	0.09	59.21
NCB clients only	11.39***	7.97	1.30	46.30
Clients of both banks	11.51*	9.11	0.81	42.44

Table 2. Summary statistics of financial characteristics for failed and surviving bank client firms (cont'd)

Panel B. LTCB and NCB failures (October 23, 1998 and December 14, 1998)

	Mean	St. Dev.	Min.	Max.
Tobin's Q				
All firms	1.06	0.45	0.40	6.58
Nonclients	1.07	0.48	0.40	6.58
Clients	1.04	0.35	0.41	3.12
LTCB clients only	1.06	0.39	0.41	3.12
NCB clients only	0.98	0.20	0.68	1.90
Clients of both banks	1.06	0.30	0.66	1.85
Age (years)				
All firms	56.61	17.01	10.00	117.00
Nonclients	56.39	16.96	11.00	117.00
Clients	57.30	17.18	10.00	113.00
LTCB clients only	57.47	18.63	10.00	113.00
NCB clients only	56.32	11.40	22.00	82.00
Clients of both banks	58.17	17.30	37.00	109.00

Table 3. Cross-section relationship between abnormal returns and client firms' financial characteristics

This table presents estimates of the correlation between abnormal returns and selected measures of client firms' financial condition modeled as:

$$\gamma_{[-1,+1],i} = \alpha + \phi COND_i + \psi X_i + \delta CL_i + \lambda(CL_i \; x \; COND_i) + \theta(CL_i \; x \; X_i) + \sum_j \vartheta_j DIND_j + \mu_{it,}$$

where the financial condition variables (COND) employed are: 1) asset size; 2) the ratio of bank loans to total assets; 3) the ratio of book-value equity to total assets; 4) the ratio of net income to total assets (or book-value of equity); and 5) the ratio of cash plus investment security to total assets. CL_i is a binary variable that identifies the clients of the failed banks and is equal to one if firm *i* is a client of the failed bank, zero otherwise. The X variables are age and the ratio of market value of assets to book value of assets (TOBQ). We also include the square of these variables. The coefficient estimates of COND and X for client firms of failed banks are ($\phi + \lambda$) and ($\psi + \theta$), respectively. The coefficient estimates of COND and X for client firms of surviving banks are (ϕ) and (ψ), respectively. The model also includes indicator variables for industries, which are not reported below. The number of observations in each regression is 3,708; of these, 3,323 relate to the clients of surviving banks and, 385 relate to the clients of failed banks. '***', '**', and '*' indicate statistical differences in the mean values of the variables for failed and surviving bank client firms at the 1%, 5%, and 10% levels, respectively.

COND = Intermediated debt/Total assets (LOANS/TA)

	Clients of Failed Banks	Clients of Surviving Banks	Test of the Differences in Coefficients
LOANS/TA	-0.0176***	-0.0142***	
TA	0.3146***	0.1157***	**
AGE	-0.0095	-0.0052***	
AGE^2	0.0002***	0.0001***	**
TOBQ	1.9810	1.2689***	
$TOBQ^2$	-0.3447	-0.1919***	
Constant	-0.9024	-0.8720***	
F-Statistic	22.87***		

COND = Equity capital/Total assets (EQUITY/TA)

	Clients of Failed Banks	Clients of Surviving Banks	Test of the Differences in Coefficients
CA	0.01291	0.0097***	
TA	0.3618***	0.1392***	**
AGE	-0.0090	-0.0048**	
AGE^2	0.0003***	0.0001***	**
TOBQ	2.1479*	1.3821***	
$TOBQ^2$	-0.3892	-0.2153***	
Constant	-2.0346*	-1.7550***	
F-Statistic	20.75***		

Table 3. Cross-section relationship between abnormal returns and client firms' financial characteristics (cont'd)

COND = Net income/Total assets (ROA)

	Clients of Failed Banks	Clients of Surviving Banks	Test of the Differences in Coefficients
ROA	0.1214**	0.0800***	
TA	0.2948***	0.1210***	*
AGE	-0.0104	-0.0070***	
AGE^2	0.0003***	0.0001***	***
TOBQ	1.3274	1.1376***	
$TOBQ^2$	-0.1761	-0.1782***	
Constant	-0.9929	-1.0083***	
F-Statistic	20.63***		

COND = Net income/Equity (ROE)

	Clients of Failed Banks	Clients of Surviving Banks	Test of the Differences in Coefficients
ROE	0.0299**	0.0296***	
TA	0.2924***	0.1107***	**
AGE	-0.0119*	-0.0073***	
AGE^2	0.0003***	0.0001***	***
TOBQ	1.5845	1.2113***	
$TOBQ^2$	-0.2182	-0.1825***	
Constant	-1.0428	-1.0343***	
F-Statistic	20.55***		

COND= LIQUIDITY [(CASH + SECURITIES)/TA]

	Clients of Failed Banks	Clients of Surviving Banks	Test of the Differences in Coefficients
LIQUIDITY	-0.0089	0.0086***	
TA	0.2857***	0.1143***	*
AGE	-0.0124**	-0.0071***	
AGE^2	0.0003***	0.0001***	***
TOBQ	1.6318	1.3150***	
$TOBQ^2$	-0.1730	-0.1937***	
Constant	-1.0509	-1.2649***	
F-Statistic	19.79***		

APPENDIX – THE THREE FAILURES

Hokkaido Takushoku Bank (November 17, 1997)

Hokkaido Takushoku Bank was the smallest so-called "city" bank, but one of the largest 20 commercial banks in Japan, with more than ¥9.5 trillion in assets.[10] On November 17, 1997, the bank announced that, due to its difficulties in raising funds, it would transfer its operations in the Hokkaido region in northern Japan to the North Pacific Bank. Its operations outside of Hokkaido were eventually sold to Chuo Trust and Banking Co. The bank's bad loans were sold to the Deposit Insurance Corporation (DIC), and the Bank of Japan extended emergency loans to the bank during the transition period to provide liquidity to meet deposit outflows. The problems of the bank were well-known, and its closure followed an aborted government-sanctioned merger attempt with the nearby Hokkaido Bank.[11]

Long-Term Credit Bank of Japan (October 23, 1998)

LTCB was one of the largest banks in Japan and was widely perceived to be in serious financial trouble prior to its failure. Despite an injection of capital from the government in March 1998, its debt was downgraded several times and its share price dropped sharply. A merger attempt with Sumitomo Trust Bank, a large bank in stronger financial condition, failed in the summer of 1998. On October 19, 1998, news reports indicated that the newly-established Financial Supervisory Agency (FSA) had informed LTCB earlier in the day that the bank was insolvent on a market-value basis as of the end of September, when it was last inspected.[12] The reports also indicated that LTCB was expected to be nationalized later in the week, when recently adopted banking legislation would

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[10] Japanese banks are generally divided into four broad categories—city, trust, long-term credit, and regional—according to both size and type of business. Historically, the four types of banks have differed in their size, composition of assets and loans, customer base, funding sources, and regulatory requirements and treatment. Long-term credit and city banks were the larger banks and trust banks the most specialized. See Genay (1998) for a discussion of some of the differences in the operations of city, regional, long-term credit, and trust banks.

[11] News articles reported that depositors began to withdraw funds from the bank after it was announced that the planned merger with Hokkaido Bank would not happen. News reports also noted that many of the large stakeholders, e.g., the life insurance companies, refused to inject additional funds into the bank's capital base in the weeks leading up to its closure. The bank's share price, which was ¥222 at the beginning of 1997, had dropped to ¥65 the day before the failure announcement on November 17, 1997. The day after the announcement, shareholders could only receive ¥5 per share.

[12] The Financial Supervisory Agency, which assumed supervisory responsibilities for financial institutions from the Ministry of Finance, was established on June 22, 1998.

take effect.[13] Four days later on October 23, 1998, LTCB applied for nationalization. The government announced that it would guarantee all obligations of LTCB, the DIC would purchase the bank's shares (last traded at ¥2), and the Bank of Japan would provide financial aid to LTCB as necessary to maintain liquidity in financial markets. According to the FSA report, at the end of September, the bank had total assets of ¥24 trillion and ¥160 billion in book-value capital. It also reported ¥500 billion, or three times its book value capital, of unrealized losses on its securities portfolio and other problem assets totaling ¥4.62 trillion, or 19 percent of total assets and roughly 30 times its capital.[14]

F. Nippon Credit Bank (December 14, 1998)

The semi-annual public financial statements issued by all Japanese banks on November 24, 1998 for the six months ending September 30 showed that another large long-term credit bank—the Nippon Credit Bank (NCB), with assets of ¥7.7 trillion as of September 1998—had significant amounts of problem loans and that its earnings had deteriorated significantly since March 1998. However, the bank stated that it was still solvent. On December 9, 1998, it was announced that NCB was abandoning its previously announced merger with and Chuo Trust and Banking Co. The abandoned merger was perceived as a sign of further problems at NCB. Shortly thereafter, news reports indicated that the FSA's examination of the bank showed that as of March 31, 1998, contrary to what NCB had reported, the bank had a capital deficit of ¥94.4 billion and was insolvent. On December 12, the government urged Nippon Credit to apply for nationalization, which it did on the next business day—December 14. The government provided assurances that the repayment of all of NCB's obligations would be satisfied in full and on time and that the Bank of Japan would provide loans to ensure the liquidity of the markets. The Bank injected some ¥80 billion into NCB to avoid having it default on its liabilities.

[13] A package of eight bills was approved by the parliament on October 12, 1998 aimed at resolving the bad loans of Japanese banks and dealing with the failure of financial institutions. The legislation allowed for recapitalization of banks with public funds and created the Financial Reconstruction Commission (FRC), to, among other duties, administer nationalized insolvent institutions.

[14] After the nationalization, the good assets of the bank were eventually sold to a consortium led by Ripplewood Holdings LLC in the U.S., which paid ¥1 billion for the bank and injected additional ¥120 billion in capital. The new bank also received ¥240 billion of public capital from the Financial Reconstruction Commission in March 2000.