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**Solutions to the Japanese Banking Crisis:
What might work and what definitely will fail**

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1. Introduction

The Japanese banking sector recorded operating losses for 10 consecutive years from fiscal 1993 (April 1993 to March 1994) to fiscal 2002. The Japanese banking “crisis” was mostly a hidden crisis thanks to the regulatory forbearance. The losses have eroded the capital base of banks, but only a handful of banks have been closed and there have not been widespread panics. The economic recovery that began in 2003 may allow the Japanese banking sector to post the first operating profits in 10 years, but as we document below the banking problems are far from over. Over the period a consensus has gradually emerged regarding causes and implications of the crisis. In this paper we seek to build on this consensus and analyze the question of what steps might be taken to end the banking crisis in Japan. We argue that an examination of the past policies in Japan that have failed, together with a study of the successful policies in other high income OECD countries that have overcome banking crises, provides a roadmap for resolving the crisis.

The remainder of the paper is divided into four parts. Section 2 briefly reviews the current conditions and describes the consensus on the problems plaguing the banking system. We distill them into four basic troubles. The first is that most of the banks are insolvent, or nearly so when properly evaluated. The second is that the banks are not currently allocating credit efficiently, and instead are directing many loans to borrowers that will not be able to repay them. The third is that the banking sector is too large (in terms of assets) to make adequate returns. The final problem is that the banks’ lack of profitability is partly related to their inability to devise high margin products that are commonplace amongst their foreign competitors. We use these four observations as a point of departure for all the subsequent analysis.

Section 3 explores the implications of these observations for the resolution of the crisis. In particular, a natural way to define the end of the crisis is when the banking sector has shrunk to a level where it can profitably operate and the banks are once again adequately capitalizing and no-longer evergreening loans to deadbeat borrowers. Recognizing this constellation of conditions as the eventual equilibrium for the industry is helpful since it identifies the set of problems that a successful policy must confront. We conclude this section with a menu of choices that contain the necessary ingredients to end the crisis.

Section 4 evaluates the competing policies, by comparing them against the international experience as well the outcomes thus far in Japan. We find that the main policies pursued to date in Japan of regulatory forbearance, liquidity support for distressed banks, and liability guarantees for depositors have been tried in most banking crises over the last 25 years. The evidence from other countries suggests that these policies do not typically lead to lower taxpayer costs or speedier resolution of the crisis. We explain why they seem to have also failed in Japan. Accordingly, we propose some alternatives that have been effective elsewhere.

Section 5 makes these arguments more tangible by focusing on the rescue of Resona Bank. We demonstrate the specific ways in which existing policies fall short and lay out a set of alternatives that can be used instead.

Section 6 concludes.

2. A stylized description of the current banking crisis

There are a number of recent, excellent summaries of the conditions of the banking sector in Japan (including, Bank for International Settlements (2002), Fukao (2003a, b), International Monetary Fund (2003), Kashyap (2002), and Organization for Economic Cooperation and Development (2001)). Rather than rehash these articles we will instead focus on the consensus amongst the researchers. We see the consensus as pointing to the four major observations mentioned in the introduction. This section documents these facts.

In taking this approach we are necessarily side-stepping a number of issues, most notably the problems in the rest of the financial system involving insurance companies and government sponsored financial institutions (see the chapters by Fuako and Doi respectively for more details on these sectors). We make this choice to keep the scope of this paper manageable, but we recognize that there is some important interdependence amongst the sectors and we return to these issues in the conclusion.

2.1 *De Facto* Insolvent Banks

The first chronic condition for the Japanese banks is the low level of capitalization. Table 1 reports figures calculated by Fukao (2003a, b). Fukao has shown that the conventionally reported data for Japanese banks overstate their capital because these figures fail to correct for two important factors.

Because the banks have many more loan losses that they have already acknowledged, but failed to provision for, the first adjustment is necessary. If they were following standard international procedures they would have much higher loan loss reserves. The increases in loan loss reserves would cause corresponding decreases in capital.

Importantly, this adjustment is only for the under-reserving against *acknowledged* problem loans. These are the loans that banks themselves rated “substandard” “doubtful” or “uncollectible” following the Financial Supervisory Agency’s (FSA) *Bank Examination Manual*. The FSA collects these data but does not publish the numbers for individual banks. It is widely agreed that there are in fact many more bad loans than the banks have voluntarily revealed to the FSA. It has been often the case that the bad loans that are uncovered by FSA inspections far exceed the amounts that had been previously reported. For example, the FSA inspection of Ashikaga Bank in the fall of 2003 uncovered ¥48 billion more of “doubtful” loans (aka category III) and ¥21 billion more of “uncollectible” loans (aka category IV) than Ashikaga’s own assessment. The amount of additional loan losses was large enough to make Ashikaga insolvent. Ashikaga was subsequently nationalized. Thus, the adjustment proposed by Fukao is a very conservative correction.

The second adjustment is necessary because the official figures count deferred tax assets (tax credits from past losses that the bank expects to claim in the future) as a part of the core capital. Compared with the U.S. tax rules, Japanese rules limit more severely the types of loan losses that can be deducted from the banks' taxable income. Thus, banks that generate more loan losses than can be deducted from their current year's profits accumulate deferred tax credits that they hope to use in the future. As Fukao notes, however, these deferred tax assets are only usable if the banks can regain profitability quickly – they can claim the expected tax credits only for no more than five years. We discuss the issue of deferred tax assets in detail in our case study of Resona Bank below. We follow Fukao and remove all the credits from the core capital.

Table 1 quantifies the importance of these problems. The first two columns of the table show the hidden capital gains in the banks' portfolios. As of March 1989, a little before the peak of the stock market, the market value of the shares held by banks far exceeded the book value at which the shares were purchased. However, by 2001 this gap had disappeared. Nonetheless, the fact that their equity holdings in other firms are still about equal to their own book value of capital leaves the banks very exposed to changes in the stock market.

The remainder of the table shows how the official bank capital figure reported in the third column should be adjusted for the hidden capital gains and other factors to get an estimate that better reflects the true capital position. The fourth column shows that deferred tax assets now account for roughly forty percent of the book value of capital. The banks were not counting them in the capital prior to 1999 (which makes sense given that they serve no buffering role). The next column shows Fukao's (probably conservative) estimates of under-reserving by banks against bad loans, which represents about one-fifth of book capital.

The sixth column shows the adjusted level of capital that accounts for the unrealized capital gains (net of the taxes owed), the under-reserving for non-performing loans, and the sham deferred tax credits. By March 2003 the adjusted capital figure was just under 9 trillion yen and therefore far below a prudent level of equity.¹

In fact, even the adjusted level paints an overly optimistic picture of the banks' financial condition. One consideration (shown by column 7) in the table is that most of this capital represents funds from past government transfers. In other words almost no private capital remains in the banking sector.

A second consideration is that even our adjusted figure exaggerates the true private capital, because of the "double gearing" between banks and life insurance companies. Banks hold a significant amount of insurance company debt (usually in the form of subordinated loans or surplus notes), and the life insurance companies also tend to hold large amounts of subordinated bank debt and stock. Indeed, banks raise money by selling their securities to the life insurance companies, but use the proceeds to buy the securities issued by the life insurance companies, so that the life insurance companies can buy the banks' securities in the first place.

¹ The Basel capital standards that Japan and other countries use to assess capital adequacy include a requirement that the Tier 1 capital exceed four percent of a risk adjusted definition of assets. As of March 2003, total risk adjusted assets for all banks in Japan were ¥435 trillion (Bank of Japan, 2003). Thus, the adjusted capital is only 2% of the risk adjusted assets.

As of March 2003, ten major life insurance companies owned ¥6.3 trillion of bank equity and subordinated bank debt (Fukao 2003c). At the same time, banks provided ¥1.9 trillion of surplus notes and subordinated loans to ten major life insurance companies. (The numbers were ¥10.5 trillion and ¥2.0 trillion respectively as of March 2001.) The net effect of this practice is to boost reported capital levels without bringing in much new money. Many of the life insurance companies are also in a very precarious financial position. Thus, the double gearing makes both the banks and the insurance companies appear better capitalized than is in fact the case.

The important conclusion is that the amount of bank core capital is currently very small and mostly consists of public funds. There is almost no private capital in the banking sector. As we report below, even using optimistic forecasts for near term macroeconomic performance we find a substantial capital shortage.

2.2 Ever-greening

Given these extremely low levels of capital, the banks have been hesitant to recognize any more losses than they have to. The regulators have been complicit and allowed the banks to avoid doing so. To cover things up, the banks have taken to rolling over loans, giving interest concessions, or partially forgiving the loans to firms with grim prospects to repay, because calling the loan would require the banks to recognize losses. We call all these actions by banks that continue support for customers with poor repayment prospects “ever-greening.”

There is a growing literature examining the potential misallocation of bank credit in Japan (see Sekine, Kobayashi, and Saita (2003) for a survey). Early studies looked at the profitability of industries that attract more bank loans. For example, in the first paper to directly investigate this issue, Hoshi (2000) found that the bank loans to real estate developers continued to grow in the 1990s, well after the industry’s profitability declined following the collapse of land prices, while the bank loans to manufacturers steadily declined. He suggested this may be caused by banks repeatedly making new loans to real estate developers so that they can cover the interest payments on past loans and make the past loans appear to be performing. Sakuragawa (2002, Chapter 5) shows that the positive relation between the regional land price increase and the importance of real estate loans to the banks headquartered in the region broke down after 1992, when banks became concerned with their capital ratios.

Fukao (2000) calculated the average amount of loans per firm and found it increased in the late 1990s in the industries that had been affected most by the collapse in land prices: construction, real estate, and non-bank financial industries. He interpreted this as evidence that banks were lending more to already heavily indebted firms to prevent their loans from becoming non-performing.

Hosono and Sakuragawa (2003) also examined the loans to the three under-performing sectors: construction, real estate, and non-bank financial institutions. They find the banks with low “market based” capital ratio, which they define as the market value of their shares divided by the sum of the book value of debt and the market value of shares, tend to increase their loans

to these three industries.² They interpret this finding as showing that banks with weak capital positions roll over non-performing loans to hide the true picture of their health.

Sekine, Kobayashi and Saita (2003) estimate a bank loan supply function using data for individual borrowers. They find that there was a break in the connection between loans received and bank debt to asset ratios. They find that loans grew more at firms with high bank debt to asset ratios starting only after 1993, and that these increases were most pronounced amongst construction and real estate industries. They also find that increase in lending was concentrated in what appears to be the rolling over of short-term loans, rather than the extension of new long-term credits. The Sekine et al. approach encounters all the usual difficulties in separating loan supply from loan demand. In this case, the question is whether one accepts their identifying assumption that a firm's bank debt to asset ratio does not influence firm's demand for bank loans.

Nishimura, Nakajima, and Kiyota (2003) examined entries and exits of Japanese firms between 1994 and 1998 using the METI (Ministry of Economy, Trade, and Industry) data from *Basic Survey of Business Structure and Activity*, and found the average productivity for exiting firms was often higher than the surviving firms, especially in construction, wholesale and retail trade industries. Since many exit decisions are presumably related to availability of working capital, their result indirectly suggests a misallocation of funds.

Peek and Rosengren (2003a,b) conduct arguably the most systematic study to date on the potential misallocation of bank credit. In the first of these papers they find that the aggregate credit flows do follow the patterns that are associated with a credit crunch during the mid-1990s. In particular, aggregate bank credit did not decline and credit extensions by banks with weak balance sheets if anything expanded more than banks with stronger balance sheets. More importantly, they find that bank credit to poor performing firms often increased between 1993 and 1999. These firms' main banks are more likely to lend to the firms than other banks dealing with these firms when the firm's profitability is declining. This pattern of perverse credit allocation is more likely when the bank's own balance sheet is weak or when the borrower is a *keiretsu* affiliate. Importantly, non-affiliated banks do not show this pattern.

Although discussions of ever-greening often focus on rollovers of bank loans, rolling over the loans is not the only way for a bank to help weak borrowers. For instance, banks can also refinance the loans at lower interest rates or forgive a part of the principal. Banks may decide to restructure the loans rather than just rolling over the loans especially if the borrowers are publicly known to be in trouble. Without such restructuring, banks would be forced to classify the loans to those borrowers as "at risk", which usually would require the banks to set aside 70% of the loan value as loan loss reserves. With restructuring, the banks could move those loans to "special attention" category, which would require the loan loss reserves of at most 15%.

There are some studies that show that many Japanese firms are receiving very low interest rate spreads, especially in recent years. For example, Smith (2003) finds that loan spreads for Japanese borrowers are (on average) lower than those for German, U.S. or U.K

² Their debt measure includes the subordinated debt that is counted as part of regulatory capital.

borrowers for the 1990s. Moreover, Japanese lenders to Japanese corporations charge lower (risk adjusted) spreads and vary credit terms less than foreign lenders that lend to the Japanese corporations. Schaefer (2003) finds that the loan rates for Japanese firms are extremely low (for most firms) or extremely high (for some that need to rely on loan-sharks such as *shōkō loan* lenders) with nothing in the middle.

Figure 1, taken from Jerram (2004), shows that even through April 2004, Japanese banks were charging less than 3% on the vast majority of their loans. Indeed, Jerram also emphasizes the fact that interest rates on short term loans (defined as those with a maturity under one year) have continued to decline despite the upturn in the macroeconomy. For example, the average rate on new short term loans in April 2004 was 1.534% as compared to 1.664% in April 2003.

Caballero, Hoshi and Kashyap (2003) attempt to quantify the amount of subsidized lending that is occurring for the publicly traded firms in manufacturing, services, retail and wholesale (excluding the nine general trading companies), construction and real estate sectors. They do so by comparing the actual interest payments that are reported by each of these firms to a notional lower bound that would be paid by an extremely credit-worthy firm. The lower bound for each firm is calculated supposing that all bank borrowing takes place at the prime rate and all bonds financing takes place at the minimum rate that is recorded for any bonds issued in the last five years. Commercial paper is assumed to have been issued at a zero interest rate. This approach to identifying subsidized lending by banks yields two noteworthy results. First, the level of subsidized lending for publicly listed firms in all the industries increased markedly during the 1990s. For this universe of firms the fraction (weighted by assets) of firms receiving subsidies tripled from around 4.7% (1981-1993 average) to 14.5% (1996-2002 average). Their approach is conservative in that it does not identify firms whose interest payments are not extremely low but are still lower than is appropriate given their risk as zombies. In this sense, the numbers should be considered lower bounds for the amount of subsidized lending.

The second key conclusion is that the subsidies were far more common for non-manufacturing firms than for manufacturing firms. In manufacturing, the asset weighted percentage of subsidized firms rose only from 3.6% (1981-1993 average) to 10.1% (1996-2002 average). In the construction industry, however, the index increased from 4.4% (1981-1993 average) to 20.3% (1996-2002 average). Similar large increases occurred for the wholesale and retail, services, and real estate industries. These patterns confirm the conventional view that lending distortions have been most pronounced in the parts of the economy that have been most protected by regulation and from external competition. These same sectors also seem to have the strongest political protection.

The effort of supporting weak borrowers not only hurts the bank profitability but also harms the rest of the economy. As Caballero, Hoshi, and Kashyap (2003) argue, these unprofitable borrowers that are protected by banks (called “zombies”) distort competition throughout the economy. The zombies’ distortions come in many ways, including depressing market prices for their products, raising market wages by hanging on to the workers whose productivity at the current firms declined, and, more generally, congesting the markets where they participate. Effectively the growing government liability that comes from guaranteeing the deposits of banks that support the zombies is serving as a very inefficient program to sustain

employment.³ Thus, the normal competitive outcome whereby the zombies would shed workers and lose market share is being thwarted. More importantly, the low prices and high wages reduce the profits that new and more productive entrants can earn, and discourage their entry. Thus, even solvent banks see few good lending opportunities.

2.3 Over-banking

Another factor that has kept the bank profitability low in Japan is the excessive size of the banking sector. By essentially all conventional measures Japan has far more intermediated lending than other advanced industrial economies. This should mean that loan spreads would be low in Japan and in fact the Japanese banks are less profitable than their peers in other countries, and have been so for over 20 years.⁴

Table 2 shows the size and the profitability of commercial banks in France, Germany, Japan, the United Kingdom, and the United States. The table clearly shows that the Japanese banking sector is large compared the other countries. Of the five countries in the table, Japan has the largest commercial bank assets per capita and the second largest bank assets to GDP ratio in 2001. (The British figures should be interpreted cautiously since their large banks have a substantial portion of their assets associated with operations outside of the U.K.) The profits for the banking sector, however, have been lowest in Japan in the past several years. The table shows that the average profit rate for the Japanese commercial bank for 1997-2001 was negative.

The low profitability of Japanese banks indeed has persisted for 10 years. As Fukao (2003a, b) stresses, Japan's banking industry did not have a *net operating* profit from fiscal year 1993 to fiscal 2002. Until late in the 1990s, the banks offset these losses by realizing capital gains on long-held stocks (through cross-shareholdings) and land. By 2000, little more could be squeezed from these sources. Since 1995, the banks have recorded net losses in more years than not. Fukao shows that the cumulative loan losses incurred and recognized by the banks from April 1992 to March 2002 is ¥91.5 trillion (18 percent of Japanese GDP in 2002).

These losses are too large and persistent to be blamed solely on the sudden decline in asset prices in the 1990s. Indeed, as the Bank of Japan (2002) has pointed out, these loan losses amount to 80 percent of the increase in loans during the asset price boom (between 1986 and 1990)! Thus, it is implausible to suggest that the continued losses can be attributed only to misguided lending decisions during the late 1980s. Rather, they are indicative of deeper underlying problems facing the banking industry, including the problem of over-banking.

³ Omura et al. (2002) estimate the amount of employment that is sustained because the banks are not forced to write off the bad loans. They estimate that writing off ¥1 trillion of bad loans would lead to 41,600 job losses in one year, of which 14,200 will remain unemployed, 20,400 will find new jobs within a year, and 7,000 will leave the labor force. As of the time of their study the major banks had ¥10.1 trillion of loans that were rated as "doubtful" or worse. Accordingly, Omura et al estimate that unemployment would rise by 143,000 and 72,000 more people would become discouraged and drop out of the labor force if all these problem loans were written off. The cost of directly compensating all the additional unemployed and discouraged workers would be ¥860 billion a year (assuming the average wage of ¥4 million a year).

⁴ Absent evergreening the low lending rates should, however, be beneficial for business.

The size of the Japanese banking sector is a legacy from the 1960s and 1970s when the choices of corporate borrowers were constrained by capital controls that hindered overseas options and other regulations that limited domestic non-bank financing options.⁵ The savings options for the households were also limited by various regulations. While the savings options have steadily expanded, and as of 2001 been fully liberalized, Japanese consumers have not yet substantially rebalanced their portfolios. Given the slumping stock market (until recently) and continued deflation, this has not been an unwise decision on the part of households. Meanwhile, Japan's banks have struggled to find profitable uses for the funds that they have retained. Many of their largest borrowers left the banks in the 1980s when the corporate borrowers' financing choices were greatly enhanced so that they could shift from bank financing to bonds, commercial paper, and other non-bank financing both domestically and abroad. Japan's movement away from bank financing is not yet complete. More and more firms will eventually migrate to capital market financing. Indeed, Hoshi and Kashyap (1999) calculate that if Japanese corporate borrowing patterns would move towards U.S. patterns, Japanese bank assets would be predicted to shrink by 25 to 50 percent. In the four years since those calculations were done, the quantity of bank loans in Japan has dropped by only 10 percent. It seems likely that much more adjustment is needed.

2.4 Backward Banks

Another important reason for the low profitability of Japanese banks is the outdated business model still followed by many of them. Japanese banks still rely heavily on the traditional banking of taking deposits and making loans. The proportion of income from nontraditional products is much smaller in comparison with the global banks in the other advanced economies. Table 3 compares income and cost structures of major banks in six countries. Compared with the major banks in the other countries, Japanese banks have low fee income and high dependence on interest income.

Hoshi and Kashyap (2001, Tables 8.3 and 8.4) compared the percentage for fee and commission income between Japanese banks and U.S. banks. For Japanese banks in aggregate, fee and commission income as a percentage of total income was essentially identical in 1976 and 1996. U.S. banks during this period increased their percentage of fee and commission income by two-and-a-half times. This disparity partially was attributable to regulation that handicapped the Japanese banks. For instance, until 1998 the banks were barred from many activities, such as provision of loan commitments, over-the-counter derivatives transactions, brokerage activities, and underwriting of corporate bonds and equities. Some of the gap is also attributable to the slow development of the syndicated lending market in Japan, since loan syndications move revenue from the form of interest payments to fees. But even after Japan's bank deregulation that was completed along with larger financial "Big Bang" on April 1, 2001, the gap persists and the Japanese banks remain overly reliant on lending revenue as Table 3 shows.

Since nontraditional products and the associated revenue streams are central to the business strategies of most global banks, this deficiency is a huge problem for the Japanese banks. There are few product lines, if any, for which the Japanese banks are world leaders. We

⁵ See Hoshi and Kashyap (1999, 2001) for more detailed discussion.

know of no examples where Japanese banks and their global rivals have competed for business on a level playing field and the Japanese banks have emerged as market leaders. Instead, the recurring pattern is that Japanese banks are later to enter markets or offer new products and, consequently, their profitability lags.

The fact that low profitability was present even in the 1980s when the Japanese economy was booming is critical since this suggests that there is little reason to believe that macroeconomic recovery alone would restore their profitability. Indeed the low profit rates are symptomatic of a more fundamental problem that the Japanese banks have not innovated and evolved like their global competitors. As we have stressed elsewhere (Hoshi and Kashyap 1999, 2001), the stunted evolution was in part due to regulatory barriers. But regardless of the cause, the consequence is that the major Japanese banks at this point have a rather different business model, product mix, and set of competencies than major banks elsewhere.

3. Long-run equilibrium and how to get there

We have just documented the four major problems that the Japanese banking sector currently faces: capital shortage, ever-greening of loans to zombie firms, over-banking, and the outdated business model. This and the next sections discuss some alternative strategies to deal with these problems.

We define the banking crisis to be over once the banks are well capitalized, stop ever-greening of non-performing loans, and are earning rates of return that are comparable to their global competitors. We see these as three minimal necessary conditions that must prevail if the sector were to be in any type of long-run equilibrium. If one accepts this definition of how the crisis must end, four important conclusions for the solutions follow.

First, a successful policy for Japan to resolve the crisis must have ingredients that will permit all three problems to be overcome. Proposed solutions that ignore one or more of these problems can be immediately spotted as being partial at best, and likely to fail absent luck or some other subsequent policy that remedies the shortcomings.

Second, it may not be necessary for a policy to tackle the product mix problem of the banks. To achieve rates of return that are comparable to the global banks in other industrialized countries, it is necessary to solve the over-banking problem. If the banking sector becomes sufficiently small so that every bank could find enough borrowers to overcome low margins from the traditional banking business, they would be able to return to profitability without changing their business model. This would be quite unusual given the experience of banking in other countries, and require substantial downsizing of the industry, but nonetheless is possible.

More likely, a successful policy would address both over-banking problem and product mix problem simultaneously. The case study of Resona Bank below offers a useful illustration of the difficulty of achieving both.

Third, no policy will succeed without a return to macroeconomic normalcy. The stagnation that accompanies deflation continues to erode the quality of bank portfolios and

capital. We view the cessation of deflation as minimum condition that will be associated with a return to macroeconomic normality; since no modern industrial economy has ever shown sustained growth along with deflation, we assume that Japan will not do this either. Without some macroeconomic improvement it will be impossible for the banks to recover their profitability either in the traditional banking business or other non-traditional business areas. In the rest of this paper, we assume that macroeconomic policies are taken to stop the deflation, so that we can focus on policy alternatives that are geared specifically toward the banking industry. At the end of this section we also explain why an improvement in the economy alone seems unlikely to be sufficient to resolve the banking crisis.

Our fourth and most important conclusion is that we can use these long-run conditions to come up with alternative strategies to solve the problems. For each long-run condition, there are multiple ways to achieve it. We can evaluate the likely success of those alternative policies. In the rest of this section, we list several alternative approaches to achieve each of the three long-run conditions and briefly evaluate those. The discussion here focuses on Japan, but it can be applied to any economy in a similar developmental stage that faces these problems. Although Japan may have some specific institutional characteristics that require special attention, it is by no means unique.

3.1 Recapitalization

Many Japanese banks are undercapitalized and some of them would be considered insolvent under a stricter (and more reasonable) definition of what constitutes capital. The shrinkage of bank assets, which needs to happen to address the over-banking problem, alone does not seem to be enough to solve the capital shortage problem. Thus, Japanese banks need to be recapitalized in some way.

There are several alternative ways to recapitalize the Japanese banks. First, one can encourage the banks to rebuild capital through accumulated profits. As the deflation stops and the economy recovers, many banks will gradually recover their profitability and using these retained profits the banks can rebuild their capital. Given the size of the capital deficit and the historical profit rates of Japanese banks this process would likely take many years before proper levels of capital are in place. Thus, this “solution” would justify a long period of regulatory forbearance. As we argue in the next section, this approach, which constitutes a part of Japan’s actual policy so far, has never been successful elsewhere in stopping a crisis.

Alternatively, the regulator can force the banks to recapitalize immediately to solve the capital shortage problem. This approach can be classified further by the source of funds and by the required level of recapitalization.

Looking at the source of funds for recapitalization, we can distinguish between recapitalization using private funds and recapitalization using public funds. Private solutions would require the banks to raise funds in the capital market (through new share issues, for example). Recapitalization with public funds, in contrast, would draw on government funds (and hence taxpayers’ money). We can also consider hybrid programs that rely on both private and

public funds. For example, recapitalization in capital markets may be supplemented by funding from the government. Finally, public funds may be “given” to or “loaned” to the banks.

Japan has already tried essentially all of these options. In March 1998 and March 1999, the government used public funds to buy subordinated debts and preferred shares of major banks. The banks were not forced to recapitalize but strongly encouraged to apply for the funds. The banks, however, are expected to “return” the public funds eventually by accumulating enough internal funds to buy back the shares and/or debts. Bank of Tokyo Mitsubishi and Sumitomo Trust and Banking have already bought back the government’s holding of their subordinated debts.

In early 2003, many major banks recapitalized themselves by issuing new shares. In many cases, this was not really a public offering in the market. The shares are bought by borrowers of the banks and/or foreign investment banks that are also business partners of the banks. The recapitalization of 2003 was not forced by the government, but they certainly felt pressure from the FSA’s renewed efforts to resolve the non-performing loans problem under the new Minister Takenaka, who started in late 2002.

The level of required recapitalization is the final critical parameter that can differ between alternative recapitalization policies. Banks may be recapitalized to the minimum necessary levels. In this case, small negative shocks in the future (e.g., an unexpectedly short-lived economic recovery, further increase in non-performing loans, etc.) would necessitate repeated rounds of recapitalization. Alternatively, banks may be required to raise the capital to a sufficiently high level so that they could withstand small adverse shocks without any additional assistance.

The Japanese government has repeatedly tried to recapitalize the banking sector during the crisis. None of the recapitalization attempts was large enough to solve the capital shortage problem. The most recent of these was for Resona Bank. As we show in the last section of the paper, the public funding superficially “solved” Resona’s problems based on a comparison of capital after the injection and reported loan losses at that time. But, many suspected under-reporting of the true size of the losses. After a re-examination of the books by the new management, Resona increased its estimates for loans losses and in doing so consumed all the capital that been supplied by the government. Thus, even in this most recent case where the support levels may have looked sufficient at the first sight, the government has not provided adequate funding.

3.2 Stopping ever-greening

Ever-greening occurs when weak banks continue to lend to zombie borrowers. There are two ways to approach the problem: one focusing on the banks and the other focusing on the borrowers.

The bank-centric approach supposes that if banks can successfully get rid of non-performing loans, the incentive to ever-green will disappear. This approach, therefore, assumes that once the bad loans are disposed of that the banks will have enough creditworthy borrowers to resume operating normally. As we note below this need not be the case.

The loan disposal can be accomplished in several ways. One is for the regulators to force banks to fully disclose the non-performing loans, sell them in the market and recognize the losses. Stricter enforcement of the capital ratio regulation might be a way to convince the banks to unload the non-performing loans. Any restructuring of the borrowers in this case would be done by the purchasers of the loans.

Alternatively, or in addition to this, the government can set up an asset management company to purchase the non-performing loans directly from the banks. Many countries have used such asset management companies to deal with banking crises. One potential problem of setting up an asset management company is that it can merely serve as a warehouse for non-performing loans. If this happens, ever-greening can continue at the asset management company (in which case any zombie distortions would persist). To solve the ever-greening problem, it is important to force the asset management company to collect or get rid of non-performing loans quickly (after restructuring if necessary). We will review the Japanese experience with various asset management companies in the next section.

Yet another bank-centric approach is to patiently wait for the banks to accumulate enough profits to write off non-performing loans. This may work if the economy recovers rapidly and banks suddenly become very profitable. Banks would have enough profits to pay for the losses from writing off non-performing loans without worrying about their capital positions. As indicated earlier, if the zombie problem is sufficiently pervasive this possibility may be very unlikely to work. Perhaps more importantly, the profit increases from the economic recovery may be severely constrained by the over-banking.

Instead of focusing on the bank side, one can also try to fix the ever-greening problem on the borrower side. The borrower-centric approach tries to stop ever-greening by making a case-by-case decision as to whether to either revive or liquidate weak borrowers.

A critical question under this approach is how many weak (and perhaps even currently insolvent) borrowers would be viable with normal macroeconomic conditions. If one believes most firms would become profitable when normal macroeconomic conditions prevail, a large scale debt relief (financed by the government) may be sufficient to solve the problem. Under this scenario, when the economy recovers, most firms will recover and past-due loans will start performing again. Note that, if this is indeed the case, ever-greening is actually a long-run rational strategy and there is no reason to force banks to stop it.

If one believes that substantial number of firms would be non-viable even under normal macroeconomic conditions, it is important to have a mechanism to sort out the borrowers that will be revived and the corporations that will eventually be liquidated or otherwise sold. In this case, ever-greening for all the weak borrowers is clearly sub-optimal and creates serious problems. Setting up an agency like IRCJ (Industrial Revitalization Corporation of Japan),

which helps banks rescue viable customers, is one form of the borrower centric approach to stop ever-greening.

3.3 Ending over-banking

Ending the over-banking is a necessary condition for the Japanese banks to restore its profitability. The size of adjustment depends on how successfully the Japanese banks can change their business models to catch up with their counterparts in the other advanced economies. If many of them fail to adjust and continue the traditional banking business, the Japanese banking sector must go through a massive downsizing.

One can consider alternative policies to eliminate the over-banking. At one extreme, the government may wait for the banking sector to reorganize itself through voluntary mergers and acquisitions. To help the reorganization during a recession, the government may actually relax normal prudential regulations so that even the weakest banks can be reorganized without being closed.

At the other extreme is a policy to eliminate the over-banking swiftly by closing non-viable banks. Given the general shortage of capital, closing down non-viable banks by strictly enforcing the supervisory rules would not be technically difficult. The policy could be further differentiated by the method of closing non-viable banks. Is a closed bank (temporarily) nationalized and later sold (after restructuring if necessary)? Is a closed bank liquidated?

3.4 Updating banking business model

As we have argued, it may not be necessary for most Japanese banks to move out of the traditional banking to restore the profitability. In that case, however, the required shrinkage of the banking industry would be very large. Thus, it would probably be desirable for many Japanese banks to update their business models.

The role of government policy in this process, however, is not clear. The government certainly should refrain from discouraging the banks from innovating, as the Japanese government used to do under the convoy system. It is certainly a good idea to allow foreign banks to enter the market so that they will bring in both innovative products and competitive pressure to the Japanese market. Other than these obvious points that derive from a general principle that the government should allow (and even encourage) private markets to work, we do not see important policy alternatives on this issue.

3.5 Relying on a macroeconomic miracle

One obviously appealing solution to all of these problems would be a sustained period of macroeconomic growth. Growth would not only help improve borrowers' creditworthiness, leading to a drop in non-performing loans, but also would raise the demand for borrowing, creating profitable new lending opportunities for the banks. The fact that many of the major banks reported profits for the fiscal year that ended in March 2004 raises the question of how

much might growth help? In particular, could realistic amounts of macroeconomic improvement be sufficient to resolve the problems?

The following crude calculation suggests that even with a rosy-scenario growth forecast, macroeconomic improvements alone are unlikely to be sufficient to end the crisis. The calculation asks how many years of extraordinary performance by the banks and the economy would be needed to eliminate the current problems. The essence of the exercise is, therefore, a comparison of the level of capital that the banks could build from the profits and other balance sheet improvements that come with very strong levels of growth with the level of capital called for by the existing regulations.

As of March 2003 Japanese banks had ¥435 trillion of risk-weighted assets. So they should have roughly ¥17 trillion of the core capital to be adequately capitalized (assuming that there are no unprovisioned loan losses). From Table 1 we saw that they had about ¥9 trillion of true capital in March 2003, of which about ¥7 trillion was from the government and was supposed to be repaid. Kashyap (2002) reports estimates for the true size of loan losses and concludes that the banks were probably hiding at least another ¥20 trillion in losses. So as of March 2003, these figures suggest that for the banks to pay off the government and be adequately capitalized they would need to raise ¥35 trillion.

Since March 2003 several favorable developments have occurred that would help the banks close this gap. First, the stock market is up about 44% (assuming a Nikkei at 11,400). According to UBS Investment Research (Sasajima 2004) the major banks reported ¥3.2 trillion in capital gains on their stock portfolios between March 2003 and March 2004. While comparable figures for the smaller banks are not yet known, Bank of Japan statistics suggest that all banks have total equity holdings of about ¥20 trillion, with just over a quarter being held by smaller banks.⁶ If we assume that the capital gains for the smaller banks were proportional to those for the large banks, this would add roughly ¥0.8 trillion in unrealized gains. Furthermore, for each subsequent 10% increase in the stock prices banks as a whole would stand to gain another ¥2.0 trillion.

The economic recovery has also improved the quality of the banks' loan portfolios. There are various ways that one might try to estimate these effects. We rely on the special inspections done by the FSA in the Spring of 2004 (FSA 2004). These inspections involved detailed examinations of the 133 of the largest customers of the large banks (who had borrowed a total of ¥10.5 trillion). These customers were chosen because their "stock prices, external ratings, and other indicators had been experiencing significant changes." These data are particularly well-suited for our exercise because similar inspections were conducted in the Fall of 2003, thus permitting a comparison and estimates of the improvement (or deterioration) of these borrowers between September 2003 and March 2004. The key finding from the FSA analysis is that loans totaling ¥1.3 trillion (12.6% of the total) showed improvement over this period. Most of these loans actually remain in one of the substandard categories, only ¥0.8 trillion were

⁶ "Assets of Liabilities of Banks" (www2.boj.or.jp/en/dlong/stat/stat32.htm#01). The Bank of Japan figures for February 2004 show large bank holdings of ¥16.3 and small bank holdings of ¥4.3. From the large bank financial statements from March 2004 (Sasajima (2004)) the large banks held ¥15 trillion. So we approximate total holdings as ¥20 trillion and assign the small banks a 25% share.

classified as normal quality as of the Spring, up from ¥0.6 trillion in the Fall. Moreover, the percentage of loans to bankrupt or near bankrupt firms also increased, rising by ¥1.8 trillion.

We believe one could argue based on these data that there has in fact been very little improvement in loan portfolios so far: the fraction of loans being upgraded is below the fraction being downgraded. However, in the spirit of the exercise, let us assume that there has been a 25% improvement in the condition of the loan portfolio. This would be twice the 12.6% observed rate, and we believe this is most optimistic scenario that one could justify.

With a 25% improvement in loan quality, bank capital would improve for two reasons. First, the under-reserving problem in Table 1 should have become less acute; a proportionate reduction would add another ¥1.35 trillion to the bank capital. If we assume that the unacknowledged loans (with estimated ¥20 trillion loan losses) improved in a like manner, then that would reduce the capital shortage by another ¥5 trillion.

Finally, if the banks can become profitable again some of the deferred tax assets that we assumed to be worthless can be claimed as an offset against profits. The scope for gains here are uncertain since the maximum that they can claim depends on reported profits (over the next five years) and the timing of the profits since some of the tax credits will expire each year. To get an upper bound on this effect, we start by constructing an upper bound forecast for profits.

For the year ending in March 2004 net income for all the major banks was -¥700 billion, but this reflects the ¥2 trillion in losses by UFJ and Resona; the remaining large banks made profits of ¥1.3 trillion. The major banks are forecasting net income for the fiscal year ending in March 2005 of ¥1.4 trillion. Smaller banks have risk-weighted assets of roughly 2/3 of the major banks. By most accounts the smaller banks as a group are less far along in restructuring than the large banks. So we believe that forecasting increases in net income for these banks equal to 2/3 of the major banks would be very optimistic. Under this scenario the smaller banks would show net income of no more than ¥0.87 trillion for the year ending in March 2004, and ¥0.93 trillion for the year ending in March 2005. This would imply total industry profits of ¥2.3 for the year ending in March 2005.

In the spirit of calculating an upper bound, we suppose that the profits would increase by 40% per year for the next three years. This would mean that net income would rise to ¥3.22 trillion, ¥4.508 trillion, and ¥6.311 trillion in March 2006, March 2007, and March 2008 respectively. For comparison, net income for in the industry in March 1989 (during the boom) was only ¥4.9 trillion (and assets at that time were ¥790 trillion as opposed to the current level of ¥740 trillion).

With these very aggressive assumptions, the undiscounted sum of total industry profits for the five fiscal years starting in March 2004 would be roughly ¥16.5 trillion (equal to $0.17 + 2.3 + 3.22 + 4.508 + 6.311$ trillion). This would allow the banks (assuming that the banks making the profits had usable credits) to claim deferred tax credits of ¥6.6 trillion.

Collectively these improvements suggest that the banks capital position could be forecast to improve by roughly ¥33.45 trillion (¥16.5 from profits plus ¥4.0 trillion from capital gains

plus ¥6.35 trillion from improved loan portfolios plus ¥6.6 trillion in deferred tax credits). Under this scenario presumably the stock market would rally further and the loan portfolios would improve further, so the banks would accumulate enough capital to make up the existing shortage.

There are, however, several reasons to doubt that this kind of miracle could occur. First, we believe no one is seriously forecasting a recovery anywhere near this magnitude. For every ¥1 trillion less in profits that does not materialize, we should also drop the estimate of the usable tax credits by ¥0.4 trillion. We also have ignored the expiration of tax credits and since most of the profits even under this scenario do not occur until 2007 or 2008, it is likely that many of the credits will expire before they can be used.

Second, there is the earlier evidence regarding the ever-greening that suggests that the banks are still extending some low quality loans. Without stopping this kind of credit extension there is little hope of reaching record profitability quickly (nor of the growth actually continuing).

Third, achieving record profitability will require more attractive lending spreads. Figure 2, also from Jerram (2004) shows that so far this has not occurred. The interest rate spreads on new loans have not shown any sign of increasing even after the economic recovery started.

Finally and perhaps most importantly, if the growth scenario does occur it would presumably be accompanied by an increase in the level of interest rates. The banks have substantial bond holdings and will suffer capital losses on these holdings whenever interest rates do rise. As a benchmark, Lehman Brothers Equity Research (Senoguchi 2004, Figure 3) estimates that the major banks have ¥104 trillion in bond holdings, with the average duration of the bonds being 3.9 years. This means that a 1 percentage point rise in interest rates would generate capital losses of over ¥4 trillion; recall the major banks' net income forecast for the year ending in March 2005 is ¥1.4 trillion. In other words, a one percent rise in interest rates wipes out several years worth profits for the major banks!

Against this background we see the growth miracle scenario as being very unlikely. The only way it could happen is if growth persists and accelerates for several years without any increase in interest rates; essentially the deflation has to persist otherwise the banks will take huge losses on their bond holdings. As we mentioned earlier, no industrial economy has ever been able to show sustained growth with deflation.

4. Strategies for managing the transition

In picking between the many alternatives just discussed it is instructive to consider both their theoretical properties and their success in other countries. To develop the empirical evidence we consider both explicit cross-country comparison and detailed country specific evidence.

The onerous data requirements involved in undertaking large-scale cross-country studies have been a serious barrier to research of this type. To our knowledge Honohan and Klingebiel

(2003) and Claessens, Klingebiel and Laeven (CKL) (2003) are the only available studies using comparable data and methods to analyze the success of alternative crisis resolution strategies in a number of banking crises. These two papers suggest three robust results.

First, there is a great deal of similarity of the policies adopted in the most crises. In particular, the three most common policies are (i) extensive liquidity support for banks, (ii) guarantees to the bank's creditors that the banks' liabilities will be paid, and (iii) regulatory forbearance whereby normal rules regarding capital adequacy, loan classification and loan loss provisioning are suspended. For instance, of the 35 banking crises (the universe of crises from 1977 to the present) analyzed by CKL, 80% of the countries used at least two of these policy options. Thus, even though every crisis differs in the details, there are enough important similarities to justify this kind of comparative analysis.

The other two general findings relate to the policies selected by the countries from this menu and the success of these policies. One finding is that there is no clear correlation between the choice of policies and the size of the ultimate fiscal cost borne by taxpayers in restoring the system to solvency. Banking crises are, of course, costly, and the taxpayers bear at least some of these costs. Some resolution policies, however, may allocate larger proportions of existing losses from the crisis to the taxpayers and/or generate additional deadweight losses during the process than other policies. The research so far fails to find any clear patterns.

The second finding is the policy choices also do not seem to correlate with the speed at which a country recovers from a crisis. We (and the authors of the papers) recognize that these correlations need not be causal; it is possible that the countries with the most severe crises are more likely to try these policies. These correlations do suggest, however, that there is no magic bullet, in the sense of a dominant policy that unambiguously lowers costs or expedites recovery.

Japan has used all three of these policy tools (as well as a couple more discussed below). It is doubtful that the failure of forbearance, liquidity support and liability guarantees to reverse the problems in Japan can be ascribed to their late deployment in the wake of increasingly large shocks. Instead the record shows that Japan turned to these tools early and they were clearly in place before the crisis in Japan was evident. Thus, the fact that Japan's financial sector problems have persisted must be due to the failure of these policies to adequately address the problems.

To put things in context, recall the opening paragraph of the summary of the IMF's Executive Board assessment of Japan in August 1997:

“Executive Directors welcomed the robust growth of the economy in 1996, which reflected the impact of policies to support aggregate demand and the correction of imbalances that had contributed to the prolonged downturn. Directors broadly endorsed the staff's view that the recovery was becoming self-sustaining, although some speakers pointed to uncertainties in the short term, including the effects of the recent consumption tax increase and continuing financial sector problems. Most Directors observed that the central challenge for policymakers was to return the fiscal balance to a more sustainable level over the medium term. Directors believed that the current easy stance of monetary policy should be maintained for the time being, but that it would likely be desirable to begin tightening later in the year, when the full effects of tax

increases on activity would be apparent. While important steps had been taken to resolve the strains in the financial sector, Directors noted that a clear framework was needed for dealing with problems among financial institutions. They emphasized the importance of deregulation and structural reform in ensuring robust growth in Japan over the longer term, particularly in light of the aging of the population.”

We believe that this assessment was in line with the consensus view (including our own) at the time, although the assessment later turned out to be drastically incorrect. This description paints the picture of a recovering economy that had definite financial problems, but not ones that would be described as a crisis. Therefore, to extent that these three policies (extensive liquidity support, guarantees to the bank’s creditors, and regulatory forbearance) were already being pursued at this point, we can conclude that they were not invoked because of the response to adverse shocks but instead were policies in place at the time of the shocks that have repeatedly failed to work.

As of the summer of 1997 Japan’s forbearance policy was already firmly in place. This can be most easily seen in the handling of the mortgage lending institutions known as the *jusen* in early 1990s. Although the *jusen* were not deposit-taking institutions, they were owned by banks and other financial institutions and financed by loans from these parent organizations and other small deposit-taking institutions, notably agricultural coops. Thus, the failure of the *jusen* would have caused serious problems for these depository institutions. As Milhaput and Miller (1997) note, after the economy slowed and asset prices began to decline the *jusen* were clearly in trouble; in 1991, a series of Ministry of Finance inspections showed that 38% of their loans were non-performing. Yet, the *jusen* continued to operate for several years while the regulators tried to arrange various recapitalization and debt forgiveness programs, until they were finally liquidated in 1996. The opposition parties heavily criticized the government’s handling of *jusen* resolution, which used ¥680 billion of public funds. This experience may have made the government even more reluctant to use public funds to resolve the banking crisis later.

Forbearance was also practiced in the case of Hyogo Bank. Hyogo, based in Kobe, was the largest second-tier regional bank in Japan, and ran into difficulties in the aftermath of the Kobe earthquake of January 1995. When a run was beginning against Hyogo, the Ministry of Finance announced Hyogo would be liquidated, but its viable operations, because of their importance to the Kobe area, would be preserved in a new bank. At the time this was the first bank failure in Japan in the post-war period. The new bank, called Midori (“green”), had as shareholders the large city banks and the BOJ, which provided fresh capital under Ministry of Finance Guidance. Established on 27 October 1995, Midori began operations on 29 January 1996. Yet, less than two years later Midori was again in trouble and the regulators again had to arrange for another merger and capital infusion. Clearly, the regulators were lax in enforcing rules with the hope that a recovery would ensue.

By the fall of 1997 the Japanese macroeconomic environment had deteriorated much faster than the IMF (and most observers including us) had expected and several large financial institutions, notably Hokkaido Takushoku Bank and Yamaichi Securities failed. By early 1998 it was becoming clear to most outside observers that the banks in Japan were much more seriously under-capitalized than had previously been thought. At the same time the government was finding more and more ways to forbear (see Hoshi and Kashyap, 2001, chapter 8). One change

involved adjusting accounting rules to improve the appearance of the public financial reports. A second was to delay the imposition of prompt corrective action requirements for regulators that had been slated to take effect in April 1998, for all banks without international operations.

By early 1998 there was absolutely no doubt that forbearance was being practiced on a large-scale in Japan. Indeed, by the August 1998 IMF Article 4 consultation the IMF's Executive Directors were calling for much more aggressive action by the government including "Rigorous enforcement of the self-assessment framework is needed so that banks recognize and provision against the full extent of bad loans. Several Directors suggested that these results be published for individual banks to increase transparency." In the six years since that time forbearance has continued, with one simple indicator being that every time a major bank has failed the losses that are uncovered are substantially above those that would be expected based on the most recent regulatory review.

By 1997, it was also clear that the government was guaranteeing the liabilities of the banks. As part of the overhaul of the financial regulatory framework in 1996, which included the scheme to cleanup of the *jusen* as its centerpiece, the Diet reformed the Deposit Insurance Act.⁷ Under the amended law the existing 10 million yen limit on the deposit insurance was temporarily lifted; all deposits were covered under the amended Deposit Insurance Act. The limit was supposed to be re-introduced in April 1, 2001, but it was later postponed to April 1, 2002, and even then was only gradually lifted. Today (non-interest bearing) demand deposits and (low interest) ordinary deposits are still fully protected until April 1, 2005. Even after that, newly introduced non-interest bearing deposits called "settlement deposits" will continue to be fully protected.

Finally, the liquidity provision by the Bank of Japan to failed (or failing) financial institutions has also been a long standing policy. The Bank has always been permitted to provide liquidity to distressed financial institutions when it sees this as being necessary (mainly for financial stability); this was specified in Article 25 of the old Bank of Japan Act and in Article 38 of the new (1998) Bank of Japan Act. This scheme was first used in 1965 to help Yamaichi Securities. More recently, the Bank of Japan used the Article 25 loans to provide liquidity to Hyogo Bank, Kizu Credit Union and Cosmo Credit Union in the summer of 1995. This category of lending was subsequently extended to other banks that failed or were rescued (including Hokkaido Takushoku and Yamaichi in November 1997).

The preceding discussion makes it clear that, as the financial crisis unfolded, Japan already had three of the main tools in place. These tools were used both before the crisis was fully evident and then repeatedly and aggressively after the crisis became clearly evident in late 1997. It seems difficult to believe that a mere continuation of these policies will help end the crisis.

In addition to these three policies, Japan also has repeatedly relied on the use of asset management companies. The first of a series of asset management companies was Cooperative

⁷ Ironically the consumption tax increase and the commitment to restore fiscal balance that many argue was critical in triggering the end of the nascent 1996 expansion was passed in this same month.

Credit Purchasing Company (CCPC) established in December 1992.⁸ In the summer of 1992, the government floated the idea of creating a government financed institution to buy up the land collateral of non-performing loans. Faced with the criticism from other industries that this would end up using public funds to rescue banks, the government scrapped the idea. The private sector banks then created the CCPC, presumably with encouragement from the government. The CCPC's goal was to remove the non-performing loans from the banks' balance sheet by purchasing them. The funds used to purchase the bad loans were lent to the CCPC by the founding banks. The CCPC was then supposed to collect on and/or sell the purchased loans. If the CCPC incurred loss when a loan was sold, the originator bank of the loan was supposed to pay for the additional loss. This scheme left the banks with ongoing exposure to the loan quality of loans transferred to the CCPC; in other words, the loan sales did not help the banks to reduce their credit risk.

The banks, nonetheless, motivated by tax considerations sold substantial amounts of loans to the CCPC: non-performing loans with a face value of ¥15.3 trillion were sold during the period December 1992 to March 1998. The Japanese tax authority does not allow banks to deduct loan losses from their taxable incomes until the borrowers' bankruptcy procedure starts. A loan sale to the CCPC was considered an exception: the banks were allowed to deduct the difference between the appraised and the face value of the loans. During the period 1992 to 1998, the banks claimed ¥9.15 trillion of such losses from loan sales to the CCPC and deducted these losses from their taxable income. Packer (2000) estimates the tax saving for the banks from this deduction was as large as ¥4.6 trillion; recall from Table 1 that official capital was between ¥25 and ¥30 trillion during this period.

The disposal of the loans by the CCPC did not proceed smoothly. By the end of March 1998, CCPC had sold 6,847 properties for the total of ¥1.1 trillion. This was only about one third of the total number of loans that CCPC purchased (19,391) and the revenue was only 19% of the total appraisal value (¥5.8 trillion). The sales were slow partly because of the recourse that the CCPC had against the original lender bank when the sale price of the collateral would be below appraised value. With declining land prices, the loan would often have to be sold at prices far lower than the appraised value, and the banks typically opposed such transactions.

Another reason was (for reasons that are unclear to us) the CCPC decided that the debtor must agree to the sale of his property. The debtor had no reason to agree to a transfer since a new creditor might prove to be more aggressive in demanding payment or in the case of a real estate loan could lead to eviction.

The CCPC continued to buy loans till the end of March 2001 in principle, but in practice very few loans were purchased after 1998. The total amount of loans sold to CCPC from 1992 to March 2001 (¥15.4 trillion in face value and ¥5.8 trillion in appraisal value) was hardly different from the total as of March 1998 (*Nihon Keizai Shimbun*, April 25, 2001). The sale of collateral seems to have picked up somewhat after 1998, and as of March 2001, the CCPC collected 80% of the total appraised value of the assets that it purchased. The CCPC was liquidated at the end of March 2004 (*Yomiuri Shimbun*, March 18, 2004).

⁸ The description of CCPC experience below is based on Packer (2000).

Another asset management company, Tokyo Kyodo Bank, was set up in January 1995 to deal with the assets left by the December 1994 failure of two credit unions in Tokyo, Tokyo Kyowa Credit Union and Anzen Credit Union. More than 90% of ¥21.5 billion of capital of Tokyo Kyodo Bank was financed using Article 25 loans from the BOJ that were described earlier. The rest of the capital was raised from private sector banks. Tokyo Kyodo Bank later absorbed assets of other failed credit unions, such as Kizu and Cosmo (both of which failed in August 1995), and changed its name to the Resolution and Collection Bank (RCB) in September 1996. In April 1999, the RCB merged with the Housing Loan Administration Corporation that we discuss next, and formed the Resolution and Collection Corporation (RCC).

The Housing Loan Administration Corporation (HLAC) was established in 1996 to collect on the loans of failed *jusen*. It started with ¥6.8 trillion of *jusen* loans. Both the RCB and the HLAC were the companies that specialized in dealing with the loans and the associated loan collateral of failed financial institutions. Unlike the CCPC, they therefore could only act once an intermediary was closed; so the regulatory closure policy was an important factor in determining which loans they ended up servicing. Given the forbearance described above this limited the scope for these agencies to push for wide-scale restructuring.

In April 1999, the RCB and the HLAC merged into a new entity called the Resolution and Collection Corporation (RCC). Unlike its predecessors, the RCC is allowed to buy non-performing loans from solvent banks, though it cannot force the solvent banks to do so. The RCC also accepts loans from failed insurance companies and agricultural coops. Unlike the CCPC, the RCC does not have recourse to the originator banks for the losses incurred when they sell any collateral associated with a loan. As of the end of March 2004, the RCC acquired ¥9.311 trillion of loans (in appraised value) from failed financial institutions (including those inherited from RCB and HLAC), of which ¥6.892 trillion (74%) were collected. The RCC has also purchased ¥327 billion of non-performing loans (in appraised value) from solvent banks, of which ¥222 billion (68%) have been collected.

In April 2003, Japan established yet another government funded asset management company. The Industrial Revitalization Corporation of Japan (IRCJ) also buys non-performing loans from the banks, but instead of selling them, the company aims to restructure and turn around the troubled borrowers.⁹ IRCJ has two years (until March 2005), during which it can buy distressed loans. They help the borrowers reorganize their business and regain profitability, often in cooperation with their main banks. Thus, IRCJ can be especially effective when the main bank has trouble convincing other lenders to participate in the rescue operation of a troubled borrower. The IRCJ can buy up the loans from the other lenders and work with the lead lender to reorganize the company. Initially, the IRCJ was expected to tackle loans to relatively large borrowers, which typically involve numerous lenders. As of June 2004, however, the IRCJ has started to restructure only 17 companies, most of which are small (with an exception of Kanebo that the chapter by Iwaisako examines in detail).

⁹ Starting in 2001, the RCC also started discussing the importance of revitalizing the borrowers while they service the non-performing loans. Thus, the division of labor between RCC and IRCJ is not as clear as it is often discussed. See the RCC web site (www.kaisyukikou.co.jp/intro/intro_0064.html).

The overall picture that emerges is one where specific events forced the government to confront various failures. None of the asset management companies were proactive with a possible exception of the RCC's attempt to buy non-performing loans from solvent banks. Even in that case, the RCC is not able to force banks to sell non-performing loans. Some of these asset management companies did absorb large quantities of loans and eventually sold the majority of them, while others did not. Until recently, however, they did not focus on restructuring and rehabilitation of the underlying borrowers.

Klingebliel (2000) studies 7 other country episodes and concludes that the Japanese experience with asset management companies is common. In a majority of the cases she studies these vehicles did not succeed in meeting their objections. Importantly, the two most clear cut successes (the Resolution Trust Corporation in the U.S. and the Swedish restructuring organizations) both actively disposed of their assets. For instance, the Swedish asset management organization, Securum, was very quick in disposing of the loans that it acquired, selling 98% of the loans it acquired within five years.

The final hallmark of the Japanese policy has been repeated incomplete and inadequate recapitalizations. The initial attempt of recapitalization was in March 1998, when ¥1.8 trillion was disbursed almost equally to 21 major banks. Although ¥1.8 trillion is a substantial amount, it was not sufficiently large to convince the market that it would solve the capital shortage of Japanese banks. The Japan premium, the extra interest paid by Japanese banks compared to other large banks in the international inter-bank market, that had increased after the crisis of November 1997 showed no sign of coming down after this recapitalization.

Following the enactment of the Prompt Recapitalization Act of 1998, a more sizable recapitalization was done in March 1999. Public funds of ¥7.5 trillion were injected into 15 major banks. The act expired in March 2001, but during its two year lifetime, the government injected an additional ¥0.5 trillion to 12 regional banks. The recapitalization of large banks in 1999 seemed to stabilize the situation briefly. The capital shortage of smaller banks, however, was never properly addressed. Only 12 regional banks applied for and accepted the public funds. Even for large banks, the stability was fleeting as capital shortages were again apparent by 2003.

When the Prompt Recapitalization Act expired in March 2001, the revision of the Deposit Insurance Act allowed the government to still provide funds to failing banks. In particular, Section 102 of the new Deposit Insurance Act allowed the government to use public funds to nationalize failed banks or help troubled (but not failed) banks to prevent a potential financial crisis. This was the scheme used for the rescue of Resona that we describe in the next section. In June 2004, the Diet passed a bill that sets up another mechanism of injecting public funds that would instead allow capital transfers without justifying them as being necessary to prevent a financial crisis.

The five policies, (i) extensive liquidity support for banks, (ii) guarantee to banks' creditors, (iii) regulatory forbearance, (iv) use of asset management companies to deal with non-performing loans, and (v) repeated recapitalization, still characterize the current approach of the Japanese regulators to the problems of the banking system. Charitably interpreted, this combination of the policies can indirectly tackle the problems of capital shortage, ever-greening,

and over-banking, which we stressed earlier. In principle, the regulatory forbearance and the guarantee of credits give time for the banks to rebuild their capital base. In critical periods, the government also uses liquidity support and direct recapitalization. The banks can gradually remove the non-performing loans from their balance sheets using asset management companies. With sufficient problem loans off the banks' balance sheets and restructured, ever-greening incentives will fall. When normal macroeconomic growth resumes, there will be no new non-performing loans emerging, and the ever-greening will stop. Over-banking will be solved by restructuring of the banks is promised in return for the public capital. Voluntary reorganization of the industry through merger and acquisitions also will help eliminate the over-banking. With the macroeconomic recovery, the banks will be profitable again.

Unfortunately, the policies have been in place in Japan for a long time and have not worked. Over-banking and ever-greening continue and bank profitability remains low. There is no reason in the historical experience to believe that these problems will disappear on their own. More importantly, there are several clear differences between the policies being pursued in Japan and the ones that have been successful in other countries.

While there are many potential comparisons that can be made, we believe the most relevant lessons for Japan come from the Nordic banking crises in the 1990s and the U.S. Savings and Loan crisis of the 1980s. The conventional wisdom is that these crises were in large part due to deregulation (Nakamura (2002), Drees and Pazarbasioglu (1998), and Barth and Litan (1998)). We have argued elsewhere that deregulation was one of the triggers in Japan, but we concentrate on these cases for two other reasons. One is that these countries have similar levels of development as Japan. In many emerging market crises the quality of legal institutions precludes certain options. This is not the case in Japan nor was it in the U.S. or Nordic countries. As far we know these are the only systemic crises that have occurred in rich, mature industrialized countries in the last twenty years. Second, the U.S. and Nordic crises were successfully and completely resolved. So we do not need to speculate over how things turned out.

As hinted at earlier, there are several stark differences between the approaches pursued in these cases and the ones tried thus far in Japan. The single biggest difference is that the asset management companies that were formed in those countries were much more aggressive in disposing of and restructuring troubled loans. For instance, Klingebiel (2000) reports that percentages of assets transferred by the asset management companies in Finland, Sweden and the United States were 64, 86, and 98 percent respectively; in each case the initial amount of assets transferred was about 8% of GDP. All three of these asset management companies accomplished their loan disposals within five years of establishments.

A second important contrast was the willingness to shrink the amount of assets in the industry. For instance, Barth and Litan (2002, Table 9.2) show that assets (as measured for regulatory purposes) in the U.S. Savings and Loan industry shrunk by 43% between 1988 and 1993. In Finland, total domestic bank assets fell by 1/3 between 1991 and 1995, while in Sweden domestic commercial bank assets dropped by 11% between 1991 and 1993.¹⁰ In stark

¹⁰ These figures were computed by the authors using data reported in OECD (1997). For Finland, the figures are deduced by summing the assets of commercial and savings banks and subtracting foreign commercial banks. For

contrast, the total domestic bank assets in Japan fell less than 1% (¥739 trillion to ¥736 trillion) in 10 years from December 1993 to December 2003.

Finally, during the period when the downsizing and loan disposal was occurring the financial institutions were decisively recapitalized and typically management was changed. For instance, as of 1988 only 14% of the S&L's assets resided in institutions that had (true) capital above 6% of assets (Barth and Litan (2002)). By 1993, 51% of assets were in such institutions and the remaining institutions essentially all had at least 3% capital. In the Nordic countries similarly large capital infusions took place. Undoubtedly the macroeconomic recoveries that occurred in the Nordic countries and the U.S. facilitated these adjustments, but we believe that these kinds of policies will eventually need to be pursued in Japan too.

To start the process we recommend a set of strict bank inspections by the FSA with a consistent standard that closely monitors the health of borrowers and collateral. The scope of special inspection that the FSA has been conducting for major banks and their largest customers should be extended to cover regional banks and smaller borrowers. Such inspections will uncover many more non-disclosed under-performing loans.

We next suggest moving simultaneously to restructure the bad loans that are uncovered and to close the most insolvent banks. Thus, we seek to attack the ever-greening from both the bank and the borrower-side. This will be contractionary and the money that would have been spent propping up the banks should be used to provide unemployment and other transitional assistance to the displaced workers. The banks and the bad loans should be sold, to foreigners if necessary, but promptly in any case.

We also favor selective and aggressive recapitalization for the healthiest of the banks. Instead of marginal increases in capital, we propose sufficient public assistance to remove any doubts about the solvency of the remaining institutions.

These policies would take the necessary steps to start the financial system on the road to recovery. This would also put an end to the zombies that have been holding down growth, to the extent the problem derives from the banks' ever-greening of loans. It is a bold program, but we believe one that is particularly appropriate now that there is a bit of aggregate growth. Large scale restructuring has a better chance now than at any time in the last several years.

5. Rescue of Resona Bank

This section reviews the restructuring of Resona Bank (and its predecessors) with the goal of tangibly showing several of the problems with the current "muddling through" strategy of dealing with the Japanese banks.¹¹

Sweden the figures are computed by summing commercial, savings and cooperative banks and subtracting foreign commercial banks.

¹¹ The study in this section is based on the accounting information and press releases on the web sites of Resona Holdings (www.resona-hd.co.jp) and the Financial Services Agency (www.fsa.go.jp), and articles in *Kin'yū Business* (*The Financial Business Review*).

Resona Bank was created by the merger of two weak large banks on March 1, 2003. Daiwa Bank and Asahi Bank, both of which were parts of Resona Holdings, merged to create Resona Bank and Saitama Resona Bank (which took over Asahi Bank's operations within Saitama prefecture). Resona Holdings also had three other banks, Kinki Osaka Bank, Nara Bank, and Resona Trust Bank, but Resona Bank was by far the biggest.

Both Daiwa and Asahi had each been in trouble for quite a while. In the public capital injection of March 1998, each issued subordinated debt of ¥100 billion, which was bought by the government. Both accepted public support again in March 1999, when the government provided public funds with differentiated arrangements for individual banks according to the perceived health of each bank. At that time Daiwa was regarded as being especially weak and was forced to accept relatively severe conditions. Daiwa issued ¥408 billion of preferred shares with a dividend yield of 1.06% to the government. The government was allowed to start converting the preferred shares into the common shares after 3 months of the share issue. This meant that if all the preferred shares were converted into regular shares the government would own more than 50% of Daiwa. Asahi issued ¥300 billion of preferred shares (with a dividend yield 1.15% and conversion starting after 39 months), ¥100 billion of preferred shares (with a dividend yield 1.48% and conversion starting after 51 months), and ¥100 billion of subordinated debt (with a coupon yield of LIBOR+1.04%). Even these conditions for Asahi were less favorable than those granted to other banks. For example, the Industrial Bank of Japan, which was considered to be healthier relative to these two banks, issued ¥175 billion of preferred shares (with a dividend yield 1.00% and conversion starting after 54 months), ¥175 billion of preferred shares (with a dividend yield 0.43% and conversion starting in 52 months), and ¥250 billion of convertible debt (with a coupon yield of LIBOR+0.98%). Finally, Kinki Osaka Bank, which is also a part of the Resona Financial Group, had issued ¥60 billion of preferred shares to the government in April 2001. These past capital infusions meant that upon its creation, the government already had a stake of ¥1.168 trillion in the Resona Financial Group.

The financial condition of Resona was shaky from the start. In the first accounting year (that ended on March 31, 2003), losses from acknowledging capital losses on stocks and non-performing loans turned out to be so large that Resona would be insolvent if the credit for deferred tax assets was excluded from its capital calculation. The bank initially planned to follow recent industry practices and claim deferred tax assets equal to the past five years' losses. This would have given the bank sufficient capital not only to make it solvent, but also to allow it to meet the minimum regulatory level for capital.¹² When the bank tried to get approval from their auditors, Asahi & Co. (the auditor of the former Asahi Bank) and Shin Nihon & Co. (the auditor of the former Daiwa Bank), each balked.

According to *Kin'yū Business* (August 2003) Asahi & Co. refused to allow Resona to count any deferred tax assets as capital because the balance sheet without deferred tax assets would be insolvent. Asahi's conservative decision was undoubtedly influenced by its recent experience. Asahi had the closest ties among the Japanese auditors to Arthur Andersen, which collapsed following its involvement in the Enron case, and had been forced to pay fines to settle the lawsuit concerning their audits of a former *jusen* company (Nippon Housing Loan, Co.).

¹² Both Daiwa and Asahi had terminated all the overseas operations by this time, so that they were required to satisfy only the "domestic standard" for capital, which is 4% of the risk assets.

Resona had no plans for recapitalization. Resona insisted that it should be allowed to count the deferred tax credits without proposing a restructuring plan and consequently Asahi & Co. refused to certify the Resona's book. The lead auditor for Asahi committed suicide two days after informing his superiors that the Resona's books were not in order.

Shin Nihon took a different approach, reportedly looking only at Resona's forecasts of expected future taxable income to determine the level of permissible tax credits. Even with this criterion (which overlooked the disconnect between the profit forecasts and the condition of the existing balance sheet), Shin Nihon decided that five years' worth of tax credits would be too much. They were still, however, willing to allow Resona to count three years' worth of losses as deferred tax credits.

Resona was dissatisfied with the Shin Nihon ruling because it would leave Resona's capital ratio lower than the regulatory minimum level. After a couple of weeks' unsuccessful negotiation, which reportedly involved the FSA, Resona had no choice but to apply for recapitalization using public funds. The government immediately convened the Financial Crisis Response Council and decided to inject ¥1.96 trillion of public funds into Resona, on the basis of Section 102-1 of the Deposit Insurance Act (DIA), which allows the government to provide public capital to a healthy but under-capitalized bank "to prevent a financial crisis." The summary minutes of the meeting (available at <http://www.fsa.go.jp/news/newsj/14/ginkou/f-20030613-2.html>) suggest that the council quickly decided that the failure to rescue Resona Bank would destabilize the financial system, and approved the recapitalization using the public funds. The minutes show no serious discussion took place about the future viability of Resona Bank.

Since DIA Section 102-1 allows recapitalization only at the bank level and not at the financial holding company level, the injection occurred with Resona Bank issuing new shares (¥0.30 trillion of common shares and ¥1.66 trillion of preferred shares) that were bought by the government. After the issue, the new shares were then swapped into shares of Resona Holdings. The prices paid by the government (¥52 for the common shares and ¥200 for the prepared shares in Resona Holdings) were comparable to the prevailing market prices. Remarkably, the existing shareholders of Resona Holdings were not wiped out!

Resona submitted its new revitalization plan in June, 2003 to the FSA. Table 4 compares some performance goals under the old plan (originally submitted when Daiwa and Asahi were recapitalized in 1999) as of May 2002 and the new plan. Compared with the old plan, the new plan shows somewhat more aggressive disposal of non-performing loans (which shows up in higher level of loan losses), lower level of loans, lower ROE, lower ROA, and higher non-interest income, such as fee income. The plan, however, continues to look optimistic, expecting only slightly lower profit after tax than the old plan and actually higher revenue growth (12.6% over two years rather than 4.8% under the old plan). The plan also expects to continue counting substantial amount of deferred tax assets as capital.

The new plan deviated from the old plan in some potentially important ways. Most of the directors were replaced by new ones, many from outside the bank, including the new chairman, Eiji Hosoya, who had been serving as vice president of JR East.

To tackle the problem of non-performing loans, the new plan proposes dividing the balance sheet into two parts: a “revitalization account” that consists of non-performing loans and the “new account.” This was in keeping with the FSA’s policy on how banks accepting government help under the DIA Section 102 should proceed.¹³ The FSA sent in a management monitoring team, which was supposed to oversee the process of the balance sheet separation and monitor the new management.

In July, the new management asked Deloitte Touche Tohmatsu (DTT) to reexamine Resona’s books as part of the preparation for the separation of the balance sheet into revitalization and new accounts. In October, following submission of the DTT report, the new management decided to record a loss of ¥1.76 trillion for the period between March and September 2003. In doing so, more than 90% of the capital provided by the government was written off. The bank claimed that the write-offs allowed it to stabilize the balance sheet and that going forward it will become profitable. The newly realized losses, however, included a ¥266 billion reduction in the deferred tax assets (counting only one year worth of credit rather than three years), a write-down that exceeds the bank’s Tier I capital (¥246 billion). Thus, the reexamination seems to have confirmed that Resona was indeed insolvent when it applied for the capital injection, as many observers suspected.

Following the DTT examination, Resona also changed the revitalization plan. The revised plan filed in November, 2003, gives more realistic outlook about Resona’s near future. Table 5 compares the revised plan to the original plan in June 2003.¹⁴ The November plan forecasts a small decline in total assets and loans. Thus, the revised plan looks a bit more realistic than the June 2003 plan. The deferred tax assets claimed are also lower. The prospect for the business income growth is less optimistic, but the dependence on non-interest income is higher. Finally, the much larger loan losses in the November plan suggest an acceleration in the write-offs of non-performing loans.

The November plan only briefly describes the separation of the balance sheet into “revitalizing” and “new” accounts without discussing any details. The success of the November plan seems to hinge on a successful reorganization of the bank’s balance sheet. The assets that will be restructured are separated from those that will be producing profits to the bank in the future, thereby clearly distinguishing the new management’s responsibility from the old management’s mistakes. This presumably will allow an independent assessment about the competence of the new management and the progress towards the creation of a viable bank.

Unfortunately, the revised plan does not disclose how many assets were moved to the revitalization account and how many assets are in the new account, making it impossible for the outsiders to calculate the rate of return on the new account that the management is targeting. The plan is also silent about the role played (if any) by the management monitoring team sent by the

¹³ For more details on the separation of the balance sheet, see the FSA document on <http://www.fsa.go.jp/news/newsj/14/ginkou/f-20030404-5.html>.

¹⁴ The June 23 Plan in Table 5 covers Resona Bank only, while the June 23 Plan numbers in Table 4 are those for all the banks in Resona Holdings (Resona, Resona Saitama, Kinki-Osaka, and Nara). Thus, June 2003 numbers in two tables are not identical.

FSA in preparing the plan. This lack of transparency and accountability undermines the credibility of the process.

Summing up, the Resona rescue exemplifies many of the problems with the current policy that we described in the last section. First, the recapitalization of the bank using public funds was done primarily aiming to avoid the failure of a large bank. The government did not thoroughly examine the long-run viability of the rescued bank. It may not have been practical to conduct detailed examination of books before the government provided funds to Resona, but they could have paid more serious attention to any signals from the financial market about the future promise of Resona Bank.

Second, the government continues to protect a wide set of creditors of failed banks, not only the depositors but also other creditors (such as subordinated debt holders), and shareholders in the Resona case.

Finally, the restructuring of banks continue to be piecemeal and uncoordinated. The problems at Resona were revealed only after the auditors refused to approve unreasonable amounts of deferred tax assets. The FSA, which had been conducting special inspections of Daiwa and Asahi, did not act before they were forced by the auditors.

Our recommended strategy would have been very different. It is doubtful that Daiwa would have ever received public funds in the first place in 1999. The money saved would instead have been concentrated on the stronger banks in the late 1990s. The loan portfolio of Daiwa would have been restructured long ago. The supervisory expertise developed in this restructuring would have been valuable in the subsequent cases that have emerged and remain untreated.

After the recapitalization of 1999, the government could have forced management changes at Daiwa much sooner. From July 1 of 1999, the government had an option of converting preferred shares of Daiwa into the common shares, thereby practically nationalizing the bank. Although Daiwa repeatedly failed to meet the profitability targets set out in the revitalization plan, the FSA did not even mention the possibility of converting preferred shares into common shares.

Even after the problems at Resona were publicized in May 2003, there is a preferable alternative strategy that the FSA could have pursued. Before applying the provisions of DIA Section 102-1, the FSA could have reviewed more carefully the Asahi & Co. judgment that Resona was insolvent. If Daiwa had been insolvent, nationalization (DIA 102-3) or liquidation with financial assistance from the public funds (DIA 102-2) would have been better options to avoid a potential financial crisis. During the restructuring, the FSA's management monitoring team could have played a more visible role in evaluating Resona's plan and progress under the new management.

6. Conclusion

Japanese banks have experienced a decade of low or negative profits and ever-increasing non-performing loans. Loan losses, combined with low profitability, gradually eroded the capital of many banks and made them *de facto* insolvent. The weak banks continued to lend to weak lenders at low interest spreads to hide the problems, which exacerbated the problems by nurturing zombie firms. This paper discussed some alternative approaches to deal with the banking problems. Drawing heavily on the experience from other countries, we have explained why the current policy is not likely to end the problem any time soon.

Now that macroeconomic conditions are improving, one might hope that the Japanese banks can finally grow out of their problems. Simple calculations show, however, that it would take several years of miraculous growth along with very low interest rates for the banks to accumulate sufficient profits to become adequately capitalized. The economic recovery alone is not likely to resolve the Japanese banking crisis.

We recommend instead a more aggressive approach to force the banks to clean up their balance sheets and restructure their loans to distressed borrowers. The recent macroeconomic improvements make this the best time since the crisis became fully evident in late 1997 to implement aggressive restructuring. The FSA, the RCC, and the IRCJ should all take active roles in this process. For the major banks, the FSA under Minister Takenaka seems to have stepped up its inspections and started to focus on the restructuring of large troubled borrowers. We view this as a useful first step, but one that must be followed up with further inspections for regional banks and smaller borrowers.

As the case of Resona shows, however, there is still too little coordination amongst the FSA, RCC and IRCJ. Also, none of these agencies has been as pro-active as the agencies in other countries that were successful in halting other financial crises. Both of these patterns must change for a solution to be achieved.

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Table 1
Official and Adjusted Capital in the banking sector

(trillion yen)

	Market value of shares A	Book value of shares B	Official Capital (Core capital) C	Deferred Tax asset D	Estimated Under- reserving E	Adjusted Capital C+(A-B)×0.6-D-E	Equity capital held by the government G	Nikkei225 Index
Mar-86	46.9	11.9	12.3	0.0	NA	33.3	0.0	15860
Mar-87	63.7	13.4	13.8	0.0	NA	44.0	0.0	21567
Mar-88	77.6	17.6	17.2	0.0	NA	53.2	0.0	26260
Mar-89	97.1	23.2	22.5	0.0	NA	66.8	0.0	32839
Mar-90	88.6	29.7	28.6	0.0	NA	63.9	0.0	29980
Mar-91	77.7	33.1	30.2	0.0	NA	57.0	0.0	26292
Mar-92	56.4	34.5	31.3	0.0	NA	44.4	0.0	19346
Mar-93	56.4	34.5	31.8	0.0	NA	44.9	0.0	18591
Mar-94	61.9	36.5	32.3	0.0	NA	47.5	0.0	19112
Mar-95	52.0	39.8	32.3	0.0	NA	39.6	0.0	15140
Mar-96	64.3	43.0	27.9	0.0	NA	40.7	0.0	21407
Mar-97	54.1	42.9	28.5	0.0	15.0	20.2	0.0	18003
Mar-98	50.8	45.7	24.5	0.0	5.1	22.5	0.3	16527
Mar-99	47.1	42.7	33.7	8.4	4.6	23.4	6.3	15837
Mar-00	54.5	44.4	35.2	8.1	6.6	26.6	6.9	20337
Mar-01	44.5	44.3	36.7	7.3	7.6	21.9	7.1	13000
Mar-02	34.4	34.4	29.3	10.7	6.9	11.7	7.2	11025
Mar-03	23.2	23.2	24.8	10.6	5.4	8.8	7.3	7873

Source of data: Fukao (2003a, b), based on Federation of Bankers Associations of Japan, "Analysis of Bank Financial Statements," various issues; securities reports for individual banks. Both market and book values represent listed shares only. The Table pertains to banking accounts of all banks in Japan.

Note: The market value of stock portfolios was not published prior to March 1990, so Fukao imputed it using the Nikkei 225 share price index.. However, the figures for 1985-1986 should be discounted, because bank stock portfolios have been gradually increasing, so that values estimated from the end of fiscal 1990 will have an upwards bias the further back one goes. 40% corporate tax rate is assumed in the adjusted capital calculation.

Table 2. Size and profitability of banking sector for selected countries

	France	Germany	Japan	United Kingdom	United States
Category of banks	Commercial	Commercial	Commercial	Commercial	Commercial
Number of banks in the category (2001)	355	199	124	42	8130
<u>Profits After Tax (2001)</u> Assets	0.64%	0.16%	-0.71%	0.75%	1.18%
<u>Profits After Tax (1997-2001)</u> Assets	0.37%	0.31%	-0.41%	0.85%	1.22%
<u>Bank Assets (2001)</u> GDP	1.10	1.12	1.33	1.71	0.63
Bank Assets per Person (2001 in U.S.\$)	24,130	25,012	43,695	40,764	22,235

Source: Organization for Economic Cooperation and Development (2003).

Table 3. Backward Japanese Banks

	France	Germany	Japan	United Kingdom	United States	Switzerland
Number of Banks	5	4	7	42	10	3
Units for next 8 rows are as a percent of assets						
Staff costs	NA	0.77	0.28	0.88	1.38	0.97
Fees and commissions	0.82	0.67	0.25	1.09	0.73	1.03
Net Profits (or loss) on financial operations	0.78	0.30	-0.77	0.48	0.43	0.50
Other non-interest income	0.44	0.30	0.00	0.00	1.07	0.07
Total net non interest income	1.76	1.17	-0.61	1.37	2.23	1.49
Net interest income	0.46	0.89	1.09	1.77	2.87	0.97
After tax profits	0.44	0.21	-0.88	0.75	0.97	0.47
Loans (as 2001 Q4)	31.36	48.93	58.33	52.55	53.6	31.88
Ratio of net non-interest income to interest income	3.86	1.31	-0.56	0.77	0.78	1.54

Source: Source: Organization for Economic Cooperation and Development (2003).

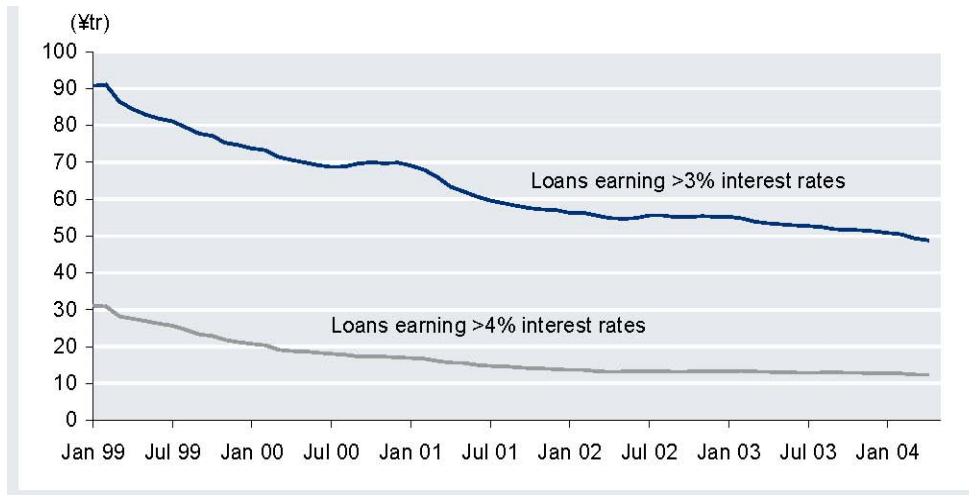
Table 4
Comparison of the May 2002 and June 2003 Revitalization Plans for the Banks in Resona Holdings (billion yen)

June 2003 Plan			May 2002 Plan			
March 2004	March 2005	March 2006	March 2004	March 2005	March 2006	
46,290	47,789	48,552	44,200	44,200	44,200	Total Assets
28,847	29,811	30,502	31,300	31,500	31,600	Loans
505	489	472	694	594	481	Deferred tax assets
731	793	823	852	885	893	Business income
677	731	752	824	847	848	Interest income
67	72	73	60	58	63	Fee income
300	372	415	348	419	444	Business profit
147	107	97	142	90	90	Loan losses
59	168	238	77	154	175	Profit after tax
12	17	104	74	157	166	Dividend payment
19.35	18.90	18.57	17.32	17.16	17.68	Non-interest income ratio (%)
15.93	15.44	16.23	23.53	27.56	28.28	ROE (%)
0.64	0.77	0.85	0.82	0.99	1.05	ROA (%)

Table 5
Revitalization Plans (for Resona Bank only): June 2003 and November 2003 (billion yen)

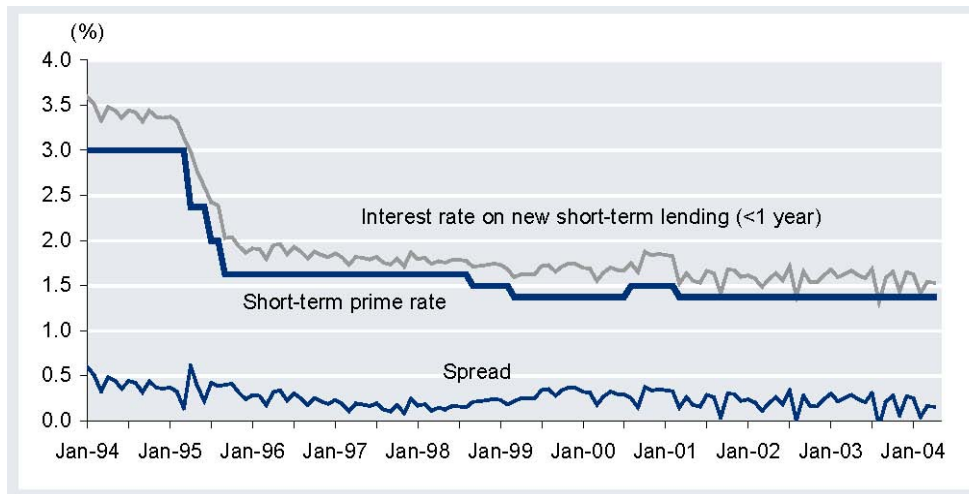
November 2003 Plan		June 2003 Plan		
March 2004	March 2005	March 2004	March 2005	
29,810	28,890	32,562	33,789	Total Assets
20,000	19,370	20,988	21,781	Loans
34	34	392	392	Deferred tax assets
438	468	502	556	Business income
440	432	524	539	Interest income
52	57	51	56	Fee income
119	234	216	274	Business profit
1,077	88	108	72	Loan losses
-1,439	116	37	134	Profit after tax
0	75	0	0	Dividend payment
14.14	21.17	13.42	12.89	Non-interest income ratio (%)
20.46	31.79	13.42	12.89	ROE (%)
0.55	0.85	0.66	0.81	ROA (%)

Figure 1



Source: Jerram (2004)

Figure 2



Source: Jerram (2004)