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A Vacuum of Governance in the Japanese Bank Management

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Abstract

This paper overviews the bank crisis Japan has faced since the early 1990s. Undeniably, the current bank crisis is the aftermath of the financial over-expansion that occurred in the late 1980s. However, this paper focuses on the issues related to managerial governance in the banking sector. We propose a hypothesis that there has existed a vacuum of governance in the Japanese bank management in the sense that bank managers have enjoyed wide latitude. This hypothesis of the governance vacuum will explain why the bank crisis has been so serious and so protracted.

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1: Introduction

The period of the 1980s and the early 1990s was characterized by the global bank crisis. Not only many industrialized countries such as the United States and Japan, but also most developing countries and the economies transiting from the central planning to the market-oriented system experienced more or less bank crisis. Lindgren et al.(1996) describes "[a] review of the experience since 1980 of the 181 current Fund member countries reveals that 133 have experienced significant banking sector problems at some stage during the past fifteen years." (Page 20) After aggressively expanding their credit to risky projects like real estate developments, many banks were found trapped in the difficulty of a large amount of non-performing loans in those countries. The government had to step to bail out heavily damaged banks by pouring public money in some cases.

It may be a comfort for Japanese people to hear that the bank crisis is not peculiar to Japan.[1] However, the Japanese bank crisis seems to be unique to its long duration and seriousness of its bad influence on the macro-economy. Japan has taken half a decade to deal with the bad loan problem in the banking sector without remarkable success. As many people had worried about, the bad loan problem has grown so serious as to endanger viability of the current financial system in the late 1997. This seriousness of bank crisis seems to be unique to Japan. Thus, we should be interested in why the banking crisis is so serious rather than why Japan has experienced the banking sector problem. After Japan, some South East Asian countries including both South Korea and Thailand has fallen into the difficulty of serious bank crisis as well. We think there are common factors which can

explain the banking sector problem in those countries including Japan.

This paper tries to give an answer to the question why Japan has suffered from so serious bank crisis from the perspective of corporate governance. We propose a hypothesis that the current bank crisis in Japan has been caused by deficiency of effective governance in bank management. Needless to say, the bank is a corporation whose management must be disciplined based on effective monitoring in order to keep their managerial efficiency. Generally speaking, the bank management could be disciplined by three means:

(1) the capital markets where either investors including depositors would monitor performance of individual banks or the threat of hostile takeovers would discipline bank managers for their bad performance,

(2) the competition in the banking industry which would weed inefficient banks out, and

(3) supervision of the regulatory authorities which would either prevent banks from taking excessive risk or force managers of distressed banks to restructure their businesses.

We explain how these disciplinary mechanisms have not effectively worked in Japan. The deficiency of effective governance, i.e., a vacuum of managerial governance, has brought forth inefficient management, and particularly delayed responses to the management restructuring necessitated by the increasing non-performing loans since the beginning of the 1990s.

This paper is organized as follows. The next section, section 2 gives an overview of the current banking crisis in Japan. It is pointed out that there exists the danger of vicious circle between the decrease in bank capital and business setback. Section 3 examines how the comprehensive safety net

implemented by the government undermined the capital market mechanism of disciplining bank management (the disciplinary channel (1)). In section 4, we argue that the Japanese government has rigidly controlled the deregulation process in the financial markets so that the market competition (the disciplinary channel (2)) was unable to influence bank management. Section 5 investigates the disciplinary channel (3) for bank management. Specifically, we discuss how the Japanese government disciplined bank management from the prudence perspective. We argue that the pervasive relationship between the regulatory authority and private banks (so-called *amakudari*) increased fragility of the banking industry.

Our argument from section 3 to 5 in this paper suggests there has existed "a vacuum" in the governance structure in the Japanese bank management in the sense that the managers are immune from the external discipline. Section 6 provides some tests to show the "vacuum" of management governance in the banking industry delayed necessary structural readjustments responding to serious crisis. The vacuum of management governance in the banking industry was viable only if investors in the capital market trust the comprehensive safety net implemented by the government. However, the prolonged bank crisis has undermined investors' trust to the government capability to manage the traditional safety net. Thus, the capital market started to fill the vacuum of managerial governance so that bank managers were threatened by harsh evaluation of the capital market. We discuss this market process of filling the vacuum in bank management governance in section 7. Finally, section 8 summarizes the discussions in this paper, and draws policy implications.

2. The Current Crisis in the Japanese Banking Sector

The current bank crisis in Japan was caused by the shortage of bank capital brought forth by a huge amount of non-performing loans. However, the information of non-performing loans is very imperfect and fragmented. Moreover, the government and banks have repeated mistakes of not disclosing full-scale information about non-performing loans. This negative attitude of the government toward the disclosure has made the non-performing loan problem messy in Japan and produced people's disbelief of any information of non-performing loans disseminated by the government. This section first explains the present situation of non-performing loans in the Japanese banking sector, then explaining how the delayed settlement of non-performing loan problem is likely to incur a vicious circle between the weakened banking sector and economic setback in Japan.

2.1. The disclosure of non-performing loans

Since the definition of non-performing loans is by nature elusive, it is difficult to grasp the exact situation of the bad loan problem. However, the difficulty comes mainly from the fact that the information about non-performing loans remained less comprehensive at the earlier stage of the bad loan problem and is only partially disclosed even now. For example, the Major Banks[2] and the regional banks started to disclose only the amount of narrowly defined non-performing loans in March 1996. The non-performing loans contained (a) loans to bankrupted borrowers, (b) loans with interest payment overdue for longer than 180 days, and (c) loans with interest reduction to borrowers in trouble.[3] Miscellaneous cooperative banks such as shinkin banks, credit cooperatives and agricultural cooperatives, have not yet

disclosed figures for non-performing loans at all. We can obtain only the aggregated figures of non-performing loans for those cooperative banks. It is noteworthy that the amount of their deposits accounts for nearly 30 percent of total bank deposits in Japan.

Table 1 summarizes the official annual figures of non-performing loans from March 1996 to March 1998. According to this table, the average of non-performing loan ratio (the ratio of non-performing loans over the total loans) in the banking sector was around 3.6% as of March 1998. This is 1.2 percent point lower compared with the figure of March 1996. More than four fifths of the non-performing loan was covered by the provision for loan losses (i.e., the provision ratio was 3.63% at March 1998). Thus, Table 1 appears to show that, except for the cooperative credit banks the uncovered non-performing ratio of which still stayed at high level the problem of non-performing loans has already been reduced to a minor policy problem in Japan. However, the Japanese banking sector came to a serious crisis immediately after September 1997. We cannot perceive the threatening bank crisis from Table 1.[4]

2.2. Extended definition of non-performing loans

The official definition of non-performing loans adopted in Table 1 is not sufficiently comprehensive compared with the U.S. standard prescribed by the SEC. Thus, the Major Banks and the regional banks extended the definition following the U.S. criteria at the end of March 1998. Due to this extension, the amount of non-performing loans reportedly jumped up by around 40 percent from ¥25 trillion to ¥35.2 trillion for those banks.

Nevertheless, many people do not believe that the disclosed figures of

non-performing loans show the real difficulty the Japanese banking sector has been facing. Actually, following guidance by the Ministry of Finance (MOF), individual banks assess the amount of the "problematic loans" which would be more or less difficult for the banks to collect. The figures of the "problematic loans" are not disclosed because bankers think they are too comprehensive and too ambiguous. They include a large amount of loans bankers believe to be collectable without great difficulties. However, outsiders think the amount of "problematic loans" indicates the actual situation of bad loans for each bank.

The MOF reported a survey of the amount of "problematic loans" assessed by banks themselves in January 1998. According to this report, the total of loans which is either impossible or very difficult to collect was ¥11.4 trillion for the Major and the regional banks (i.e., just 1.8% of the total loan of these banks). In addition to this, however, those banks held the problematic loans that must be carefully treated in order to collect amounting to ¥65.3 trillion. In total, the problematic loan was higher than 12% of the total loans for these banks. This is substantially higher than the non-performing loans ratios officially disclosed.

Figure 1 comparing the figure of narrowly defined non-performing loans with the figures of both the non-performing loans defined by the US standard and the problematic loans self-assessed by banks as of March 1998 conveys us the impression that the Japanese non-performing loan problem is far from being settled. Some of the problematic loans are likely to change into non-performing ones in the near future. In particular, the Japanese economy has been suffering from the sluggish condition since the early 1997 partly due to the turmoil in the financial system. The business setback would

further increase the amount of non-performing loans. Thus, we should not be optimistic about the capability of the banking sector of recovering form its deteriorated balance sheet.[5]

Moreover, both the banks and regulatory authorities showed negative attitude toward the disclosure of bad loan information. At first, they disclosed only the narrowly defined non-performing loans of the restricted section of the banking sector. Then, they gradually extend the definition of bad loans. The disclosed amount of non-performing loan has increased accordingly. This disclosure policy produced an unfortunate consequence of depriving the official figures of credibility.

2.3. The danger of vicious circle

The Japanese banks faced "the Japanese premium" (defined by the difference between LIBOR and TIBOR for US dollar) in international money market immediately after September 1995 for the first time since the first oil crisis in 1974. In the summer of 1995, some Japanese financial institutions went down due to the huge amounts of non-performing loans. After abruptly jumping up to higher than 30 basis point (in terms of 3 month US dollar), the Japan premium had remained at around 10 basis point until the beginning of November 1997. In the late November, the Japan premium went up to 100 basis point reflecting the turmoil in the domestic money market.[6]

The development of the Japan premium suggests that the international money market had already started to give an alarming signal to the Japanese banking system in the fall of 1995. However, the Japanese government belatedly started to force the banks to re-capitalize by announcing that the "prompt corrective action rules" would be introduced in April 1998. Both

this announcement and the prolonged sluggishness of stock prices compelled banks to reduce credit supply in 1997. This is a "credit crunch phenomenon." The requirement of more comprehensive disclosure of non-performing loans seems to have made the credit crunch more serious. Combined with the impact of the tax increases in the first half of 1997, the credit crunch has promoted the business setback that increased the amount of non-performing loans in the banking sector. Obviously, this is a vicious circle between deficiency of bank capital and the macroeconomic slowdown.[7]

The fall in stock prices caused by the economic setback has decreased the accumulated amount of unrealized capital gain on shear-holdings in the banking sector. Since the unrealized capital gain has been an important ingredient of bank capital (tier II), the fall in stock prices makes the deficiency of bank capital worse leading to another round of "credit crunch." This is also a sort of vicious circle. Thus, in order to revitalize the Japanese economy, we badly need to reconstruct the banking sector by specific policy measures to suppress the vicious circles starting from the non-performing loans in the banking sector.[8]

3. The Safety Net in Japan

Why have we suffered from so serious bank crisis? This paper proposes the hypothesis that the bank crisis in Japan is an issue of managerial governance. In this section, we investigate whether or not the capital market disciplined bank management effectively in Japan.

3.1. Lack of Capital Market Discipline

From the viewpoint of standard theory of corporate finance, the degree of concentrated ownership of firms is important as an effective device of capital market control of the corporate management (Prowse(1992)). In reality, Japanese banks are more diffusely held than non-financial companies are. According to Kim and Rhee(1997), the top six shareholders of banks hold on the average 18.4 percent of the total shares outstanding. In contrast, Prowse(1992) finds that the top five shareholders for the Japanese mining and manufacturing companies hold 33.1 percent of the total shares outstanding. In this sense, the Japanese capital market is not so powerful in monitoring bank management.

We should also note that insurance companies have often occupied the status of largest shareholders of banks. The insurance companies were quite helpful to incumbent bank managers when they were required to strengthen their capital since the end of the 1980s. Specifically, Japanese banks issued a large amount of subordinate debt (or subordinate loans) to increase their equity capital following the BIS capital adequacy requirement. Insurance companies actively bought most of the debt to help bank management. The main objective for the insurance companies to buy subordinated debt issued by banks was not to monitor bank management more strongly, but to keep business relationships with the banks. The insurance is most heavily protected in the Japanese financial industries. The government often tried to make use of the rent accumulated in the insurance industry for the "public purpose," and the insurance companies tended to faithfully obey the government policy. For example, many market observers in the Tokyo Stock Exchange said that the Japanese government implicitly guided insurance companies and other institutional investors to keep their positions in the

stock market in order to counterbalance the downward pressures on stock price levels. Thus, it was a plausible story that the government permitted banks to issue subordinate debts to increase their capital at the end of the 1980s immediately after the BIS capital adequacy regulation became effective, then implicitly order (or recommend?) insurance companies to support banks by buying most of the debts. If so, the insurance companies have been far from a reliable monitor of bank management. The Mechanisms of the Safety Net in Japan

We define the financial safety net as a social system of dealing with distressed banks and of distributing social costs associated with bank failures among related parties. The government provides a financial safety net in order to minimize the spillover effects of failures of banks and other financial institutions on the financial system as a whole. The safety net also has important implications for risk sharing in the financial system. Specifically, the operation of the safety net changes the *ex post* distribution of social costs associated with bank failures. The safety net decreases monitoring incentives of depositors and other investors either explicitly or implicitly protected from bank failure losses. Thus, appropriate incentive mechanisms are required to reinforce monitoring of bank management to keep the safety net system viable. The wider is the scope of the financial safety net, the stronger moral hazard incentives are given to bank management, and thus, the more energetically the regulatory authorities must monitor banks to prevent excessive risk-taking in place of depositors and investors.[9]

The Japanese financial system operates under an extensive safety net implemented by the regulatory authorities. The MOF has executed programs to rescue distressed financial institutions in tight collaboration with the Bank

of Japan (BOJ) and private financial institutions, particularly major banks. Before 1990 there occurred some bank failures though the number was quite small.[10] The MOF guided (more precisely ordered) private banks to rescue their distressed peers. Probably, the most important rescue program implemented by the MOF before 1990 was the case of merger of Heiwa-Sogo Bank by Sumitomo Bank in October 1986. Heiwa-Sogo got into difficulty during the first half of the 1980s. In 1985, the MOF made a bail-out plan for this bank to prevent the crisis of Heiwa-Sogo from destabilizing the Japanese banking industry as a whole. Finally, in 1986, the MOF succeeded in persuading Sumitomo to absorb Heiwa-Sogo. Despite de facto bankruptcy, the closure of Heiwa-Sogo did not cause damage to depositors and holders of other debt issued by this bank. Sumitomo bore the cost of dealing with the distressed bank. On the other hand, Sumitomo was able to expand its branch network at once by absorbing Heiwa-Sogo's branches.

In other cases, the MOF often placed its officers on the board of the distressed bank with a view to reorganizing its management. Dispatching officials to a distressed bank may be an effective signal to inform the public that the government has made a commitment to rescue the bank at any cost. This signal might have helped the MOF to persuade other banks to collaborate with the bailing out program.[11] In reality, however, this signaling does not seem to be always successful. One of the most recent cases was Hyogo Bank, to which the late chief of the Banking Bureau of the MOF was sent to reorganize its management. Despite this intervention, Hyogo finally went bankrupt in October 1995. This paper will examine how the human relationship between regulatory authorities and private banks, which is called "*amakudari*" in Japanese, influences the stability of the banking sector.

3.3. Comprehensive Safety Net

Since the actions taken by the authorities to rescue troubled banks have been covert, it is difficult to estimate the social costs of the safety net and the exact distribution of the burden among the various agents. However, the safety net was comprehensive in the sense that not only depositors but also almost all other debt holders (except for some financial institutions) were exempted from the burdens associated with bank failures. In most cases, even shareholders of failed banks seemed to be rescued from bank failures. For example, in the case of failures of credit cooperative banks, their equity holders were not required to share the costs of failures.[12] The costs of preserving financial stability have fallen disproportionately on sound private banks, particularly major banks. Until the early 1990s, the financial authorities rarely paid the costs of the bail-out procedure, confining their role to coordinating the rescue program endured by private banks and other financial institutions.

In some cases, the BOJ may have extended loans to distressed banks at the official discount rate, which was substantially lower than money market interest rates, but it is impossible to obtain any information about these unofficial rescue programs. After the rescue of Yamaichi in 1965, the BOJ utilized emergency loans (authorized by Article 25 of the BOJ Act) for the first time to support the Tokyo Kyodo Bank, newly established in 1995 to take over two failed credit cooperatives in the Tokyo metropolitan area. The amount of the BOJ's emergency loans increased abruptly during 1995 due to managerial crises in several small and medium scale banks (including Hyogo Bank) and reportedly reached a little more than ¥1.0 trillion.

3.4. Danger of Forbearance Policy

The MOF's implementation of the safety net was essentially covert. There were no explicit rules that the authorities should obey in implementing the safety net. Therefore, it was almost impossible for outsiders to evaluate the MOF's performance in operating the safety net. Herein lies a danger of the forbearance policy in the sense that the authorities postpone taking determined actions to liquidate *de facto* insolvent banks. The bureaucrats in charge of monitoring the management of individual banks have significant incentives to postpone any definite policy decision which would reveal their incompetence or failures to the public. It is well known that the forbearance policy is likely to incur large social losses when the troubled banks finally fail after remaining in business for a long time due to this policy (Kane(1985, 1993)).

It is easy to understand why the forbearance policy tends to increase the social cost of dealing with bank failures. A bank at the brink of bankruptcy has a particularly strong incentive to take extreme risk because it stands to lose almost nothing when it fails. On the other hand, depositors and most other investors are not cautious about the soundness of individual banks' management under the comprehensive safety net. The insufficient disclosure is likely to worsen the situation. Therefore, unless the authority stops its operation, the distressed bank continues to increase liability, most of which will finally be transferred to the safety net.[13]

3.5. Deposit Insurance in Japan

The experience of the US financial system suggests that deposit insurance should be an important element of the safety net. However, this

was not the case in postwar Japan. At the end of the 1960s, some of the MOF officials were seriously concerned that the coming deregulation in the financial service industry would increase the number of banks and other financial institutions suffering from serious distress. The system of deposit insurance was introduced in 1971 in order to keep the financial stability in the face of financial deregulation. However, the facility of the deposit insurance system was not actually utilized until 1992. The MOF continued to implement the traditional safety net to avoid the straightforward bankruptcy of depository financial institutions. The MOF gave priority to the protection of weak (and therefore inefficient) banks over the promotion of competition in the Japanese financial industry, even after the introduction of deposit insurance. The Deposit Insurance Corporation (DIC) remained nominal for a long time. Its functions were limited compared with those of its US counterpart (the FDIC), being confined to paying off insured deposits in cases of bank failure, although the DIC has never resorted to paying off. In 1986, the Law of Deposit Insurance was amended to strengthen the DIC's competence. For example, the amended law allows the DIC to support schemes of rescuing or disposing of distressed banks by giving the necessary funds to private agents involved in the schemes. The DIC functioned for the first time only in April 1992, when it supplied ¥8.0 billion to help Iyo Bank, a regional bank, absorb Toho Sogo Bank.

The DIC has been equipped with a means of paying off insured deposits of failed banks from the time of its establishment. However, the government announced in December 1995 that they werenot prepared to exercise it, although a quarter century had passed since the start of deposit insurance. In December 1997, the government declared that all investments

into deposits and other bank debts such as bank debentures would be protected from bank failures. The purpose of this policy is to calm down people's concern with the danger of bank failures caused by the financial crisis following the bankruptcy of Hokkaido-Takushoku Bank and failures of a few major securities companies including Yamaichi in the end of 1997.

Of course, this commitment by the government is likely to produce further moral hazard on the side of bank management by weakening incentives of depositors and investor to monitor bank management. However, the long-standing implementation of the comprehensive safety net has produced among depositors and other investors a perception that they will never be required to share the burden if their banks should go bankrupt. Because of this widespread perception, the government adoption of paying off insured deposits without rescuing investors of bank debts other than insured deposits would result in an unexpected shock to the financial system, thereby making the difficulty more serious. Thus, at the end of 1997, the Japanese government could not but make a commitment to ensure that the wide spread perception about the safety net was valid.

As Ueda(1996) describes, "the most important safety net in this country has not been the deposit insurance system, but the public's confidence in the MOF and the BOJ's ability to avoid a major instability in the financial system." This safety net may have had the merit of freeing people from the need to bother with the soundness of individual banks' management. However, it has also deprived investors of incentives to monitor the performance of individual banks and hindered the development of market mechanisms to discipline bank management. The lack of market mechanisms, in turn, has made it quite difficult for the government to

abandon the traditional safety net. We learn from this experience how dangerous it is for the authorities to have people believe in effectiveness of too comprehensive safety net.[14]

3.6. Limitation of the Traditional Rescue Method

Since the beginning of the 1990s, when the so-called 'bubble economy' burst, it has become increasingly difficult for the MOF to maintain the traditional procedure of bailing out bank failures. This is reflected in the utilization since 1992 of the deposit insurance system to cope with the financial distress of individual banks, although, as we have explained, the paying off of insured deposits has never been exercised. The scale of the DIC is as yet limited, but its increasing use marks a significant change in the operation of the Japanese safety net. One of the reasons for this shift is that, with structural changes in financial markets, there are fewer rents in banking for the MOF to use in influencing banks. With financial deregulation, it has become difficult for the authorities to manipulate regulatory means to favor some financial institutions over others. For example, interest rate deregulation has reduced the meaning of branch offices for individual banks, making the MOF's administration with respect to the branch network less important.[15]

Since the early 1990s, it has become more and more difficult for the government to obtain cooperation from private banks in implementing the traditional safety net.[16] Thus, it is a natural result that the DIC started play a significant role of dealing with troubled banks since April 1992 when the DIC supported Iyo Bank to absorb the failed Toyo Sogo Bank after longer than twenty years inactivity. From April 1992 to May 1998, the DIC

intervened into 25 cases of bailing troubled banks out and provided the banks cooperating the bail-out schemes with subsidies of more than ¥2.4 trillion (see Figure 2). In addition, the DIC is to be mobilized in 35 cases of bank failures including Hokkaido-Takushoku in the near future. Since the early 1990s, the traditional methods of dealing with bank failures have not yet disappeared, and many private banks are still playing an important role through collaboration with the regulators. However, the role of the DIC in the process appears to have become increasingly important, and it is likely that the deposit insurance system will be utilized substantially in the future.

Use of the deposit insurance system to facilitate reorganization did not, however, imply that banks would undergo formal bankruptcy procedures. Even after 1990, the government continued to avoid explicit bank failures. The government has provided sound banks with incentives either to merge with insolvent ones or to collaborate with the government's policy of restructuring troubled banks by using the deposit insurance system intensively, rather than preferential regulatory treatment. This implies a slow reorganization of the financial system and a marked increase in the burden borne by the DIC. The regulator need to have its monitoring power strengthened, and thereby to keep the cost of bailing-out policy within manageable bounds. In particular, the regulator should be able to order banks in distress to cease operations before the negative value of their net wealth becomes too great. In fact, the New Law for Strengthening the DIC, instituted in 1996, authorizes the regulator to take such a policy of "prompt corrective action (PCA)." The prompt corrective action policy was started at April 1998. The Financial Supervision Agency newly established in June 1998 will require individual banks to strengthen their capital bases following

an explicit rule so that the decreases in equity capital of a bank will promptly induce the authority to strengthen its monitoring of the bank management.

The purpose of the PCA is to prevent excessive risk-taking by banks and to promote the regulator to intervene in bank management following explicit rules prescribed by the capital adequacy standard. The latter is expected to reduce the danger of "forbearance policy" on the side of the regulator. Unfortunately, the PCA was started belatedly after almost every Japanese bank had been deeply involved into the serious problem of non-performing loans.

The explicit involvement of the DIC in the operation of the safety net should be beneficial to the Japanese economy. The social costs of bailing out distressed banks will become more transparent, and this will facilitate assessment of the efficiency of the current financial safety net. It will also make the regulatory authorities' administration more accountable, as suggested by the recent experience of dealing with the two cooperative credit banks in Tokyo. The improvement of accountability is desirable because it will discipline the regulatory authorities, thereby preventing the forbearance policy, and will rationalize the safety net mechanisms.

4. Disciplinary Influence of Market Competition

The comprehensive safety net deprived the capital market of incentives to monitor and discipline bank management in Japan. Then, what about the disciplinary influence of market competition on bank management? As Nickell, Nicolitsas, and Dryden(1997) show with regard to manufacturing industries, we may expect full-scale market competition exerts strong

disciplinary influence on corporate management by weeding the inefficiently managed firms out. Regardless of its specific ownership structure or any other financial governance structure, the corporate management would be disciplined by fierce market competition. Many Japanese believe that the Japanese manufacturing firms have achieved excellent performance because they have been long faced with fierce competition in the global market. At present, this belief remains a conventional view that must be empirically tested. However, it seems fairly well-grounded. In contrast, the Japanese financial services industries including the banking have been protected from full-scale competition by the competition restricting regulation. Thus, the market competition has not worked to discipline management in the banking and other financial services industries in Japan.

4.1. Role of Competition Restricting Regulations

The competition restricting regulations, such as interest rate controls and restriction on new entry into banking and other financial business through the system of compartmentalization, conferred a handsome amount of rents on existing banks and other financial institutions. The primary purpose of the MOF's administrative guidance was to suppress full-scale competition in each of the compartmentalized financial businesses, thereby protecting the less competitive small-scale banks such as sogo banks, shinkin banks and credit cooperatives. The MOF's policy stance was often called the "convoy administration."[17]

The rents created by the competition-restricting regulations contributed to stabilizing the banking system under the Japanese comprehensive safety net in two ways. First, as economic theory shows, the existence of rents

provides private banks with incentives to refrain from excessive risk-taking in order to continue enjoying handsome rents, even without effective prudential regulations (Hellman, Murdock and Stiglitz(1997)). Furthermore, thanks to protection offered by the competition restricting regulations, even inefficient banks rarely went to the brink of managerial difficulty that is particularly likely to induce moral hazard behavior.[18]

Second, the monetary authorities were able to utilize the rents accumulated in the banking sector as a means of dealing with banks in financial distress. Specifically, the regulators relied on private banks' collaboration in implementing the safety net, and major banks faithfully bore a disproportionate share of the costs involved. This mechanism would not have worked had the major banks not enjoyed the rents stemming from the competition-restricting regulations. The MOF also utilized the competition restricting regulations to give private banks an incentive to accept its initiatives in the process of dealing with bank failures. The MOF manipulated the regulatory means to do favors for those banks who toed the line and to penalize those who failed to heed their guidance. In other words, specific administrative guidance based on the competition-restricting regulations was an instrument for the MOF to determine the distribution of rents among banks. Thus, the competition-restricting regulation was strategically important for the MOF in order to maintain the viability of the comprehensive safety net.[19]

4.2. Delayed Deregulation in the Financial Markets

However, we should note the competition-restricting regulation has gradually weakened the capability of the Japanese banks and other financial

institutions to adapt themselves to environmental changes since the mid-1970s. We may say that practically the financial deregulation has been tightly controlled by the government (more specifically by the MOF). The Japanese government took the policy of gradualism for the purpose of preventing "unduly destabilizing" impacts of financial deregulation. In reality, this gradualism was synonymous with the policy of protecting vested interests existing in the financial industries, thereby suppressing the disciplinary effects the financial deregulation was expected to exert on management in the financial industries including the banking.

Rather, the financial deregulation was promoted by the pressures from abroad, particularly from the U.S. than on the government initiative. For example, the ad-hoc Yen/Dollar agreement between U.S. and Japan realized through the strong requirement by the Reagan administration in 1984 compelled the Japanese government to provide an explicit timetable of liberalizing financial markets.[20] Compared to liberalization in international capital market, the Japanese financial markets have been belatedly deregulated. The so-called "big bang" proposed by former Prime Minister Ryutaro Hashimoto in November 1996 was the government commitment of abandoning the policy gradualism. This is a sort of the shock-therapy to make up for lost time.

Of course, we should not totally deny the impact of financial deregulation on domestic financial markets during the 1980s. In particular, major companies reduced their dependence on bank borrowing by issuing a large amount of corporate bonds in international markets. This "internationalization" of corporate finance induced deregulation of domestic corporate bond markets since the mid-1980s (Horiuchi(1996)). However,

generally speaking, the Japanese banks and other financial institutions were able to base their business on the huge amount of wealth accumulated by households. The gross amount of financial assets held by the households reportedly amounted to ¥1,200 trillion as of the mid-1990s. Thus, it would be an exaggeration to say that the internationalization of corporate finance exerted substantial influence on their way of business.

5. The Role of Government in Bank Managerial Governance

The previous sections stressed neither the capital market nor market competition was effective in disciplining bank management in Japan, mainly because the intervention of government (the MOF) into the financial markets through the comprehensive safety net and control of deregulation process suppressed those disciplinary influences. This is to some extent a natural outcome from the current legal framework which assigns great responsibility of monitoring bank management to the Ministry of Finance and the Bank of Japan. The Banking Law authorizes the MOF to intervene into management of banks for purpose of prudential regulation. The BOJ is also in charge of monitoring bank management particularly from the viewpoint of money market adjustment. Thus, the current prolonged turmoil of the banking industries is mainly responsible for the financial authorities. In the following, we will first examine how the Japanese government has implemented the prudential regulations, and next provide evidence to show the weakness of monitoring by the regulatory authority which led to fragility of the banking industry.

5.1. Capital Adequacy Regulations

Capital adequacy requirements, accompanied with rigorous monitoring by regulators, are a typical means of prudential regulation. During the period of economic reconstruction immediately after World War Two, the MOF was seriously concerned about the prudence of bank management, because banks' equity capital per deposit had fallen sharply from 29.9 per cent in 1930 to only 5.6 per cent by 1953. With a view to strengthening banks' capital bases, the MOF started in 1953 instructing banks to reduce current expenses to 78 per cent or less of current revenues. This administrative guidance continued until 1973.

In 1954, the MOF introduced the capital adequacy regulation, which required banks to increase broadly defined capital to more than 10 per cent of total deposits.[21] This could be regarded as a forerunner of the capital adequacy regulation introduced by the Bank for International Settlements (BIS) in 1987. However, some depository financial institutions were not covered by this capital adequacy regulation. For example, the sogo banks were required only to maintain more than the prescribed minimum amount of equity capital (book value). Thus, they could have increased their leverage ratio without limit had they wished to do so. When the sogo banks converted to regional banks in February 1989, the MOF started to impose the same minimum capital adequacy ratio on the sogo banks (now called the regional banks of tier two) as for the city banks and the other regional banks. Shinkin banks, which are nonprofit financial institutions, had been free from the capital adequacy regulation until May 1986, when the MOF introduced administrative guidance in the form of a minimum capital adequacy ratio.

Thus, until the late 1980s, the capital adequacy regulation did not

cover the whole range of depository financial institutions. Moreover, the regulation seemed to be ineffective. Figure 3 shows that, from 1960 to the mid 1970s, the average of the (broadly defined capital/deposits) ratio for the banking sector, which is comprised of city banks and regional banks, remained almost constant at 6 per cent, far below the MOF's requirement of 10 per cent. Furthermore, the average capital/deposit ratio dropped abruptly to below 4 per cent during the 1980s.[22]

5.2. Bank Capital and *Amakudari*

We stressed that the bank management has been disciplined neither by the capital marker nor by the market competition. In the previous subsection, we explained that the MOF was not serious to implement the prudential regulation. If our explanation is true, there existed a vacuum in the governance of bank management. This vacuum should have made the Japanese banking sector potentially fragile.

However, Aoki, Patrick and Sheard(1994) argue that the financial authority has been disciplined to monitor bank management through the so-called *amakudari* system; i.e., the system prevailing among private banks (and other firms) to accept post-retirement officials to their managerial board.[23] According to their argument, the *amakudari* system have given regulatory officer incentives to rigorously monitor bank management faithfully. If they fail in achieving good performance as a monitor, they will lose chances of obtaining good jobs in private banks after retirement. Thus, following Aoki, Patrick and Sheard (1994), the bank performance in terms of soundness will be positively influenced by *amakudari*.

However, this *amakudari* system is accompanied with the danger of

an agency problem, because the bureaucrats are to supervise the management of the banks that are likely to employ them after their retirement.[24] If the financial authority and private banks bargain with each other through manipulating monitoring effectiveness and accepting *amakudari* officials, the *amakudari* system would undermine effectiveness of monitoring by the financial authority and allow banks to engage in unsound management at the expense of depositors and/or taxpayers (Horiuchi and Shimizu(1998a)). This agency problem hypothesis predicts that the banks accepting *amakudari* officials from the financial authority will show poor performance in terms of soundness. This is in sharp contrast with the hypothesis advocated by Aoki, Patrick and Sheard(1994).

We test the hypothesis whether or not the *amakudari* system undermines the prudence of the Japanese banking sector by a simple statistical method. Here, we take a sample of 125 regional banks existing as of March 1996. We classify those sampled banks into four categories according to whether or not they accept *amakudari* officers from the regulatory authorities. The first group (category MOF&BOJ) contains the banks which accept *amakudari* officers from both the MOF and the BOJ. The second one (category MOF) consists of the banks accepting officers only from the MOF. The third one (category BOJ) is the group of banks accepting *amakudari* only from the BOJ. Finally, the fourth one (category NON) consists of the banks that do not accept *amakudari* officers at all.

Table 2 compares performances the respective categories of regional banks achieved during the latter half of the 1980s (i.e., from 1985 to 1989). Here, the banks are subdivided according to their *amakudari* status as of 1985. The bank performance is measured in five terms: i.e., capital/asset

ratio EQT, the annual growth of total assets GAS, and the current profits per equity capital PRO, and the non-performing loan/total loan ratio BAD measured at March 1996. Except for BAD, these performance variables are the averages of the sample period.

In Table 2, the capital/asset ratio (EQT) is significantly lower for both categories MOF&BOJ and MOF than for category NON, while we find no significant difference between the respective categories as for asset growth (GAS) and profitability (PRO). For example, the capital/asset ratio (EQT) for category MOF&BOJ banks, which accepted *amakudari* officials from both the MOF and BOJ as of 1985, was on average 0.562 per cent point lower than that of the category NON banks. The differences are statistically significant at the 1 per cent level. As Keely(1990) argues, the lower level of capital/asset ratio implies the higher level of risk. Thus, Table 2 suggests that the banks accepting *amakudari* officials from the MOF tend to take higher level of risk.[25]

While the equity/asset ratio (EQT) could be regarded as an ex ante measure of the risk-taking by banks, the bad loan ratio (BAD) could be an ex post measure of risk undertaken by banks. Thus, it would make sense to compare the bad loan ratio of the respective bank groups in order to examine how the *amakudari* relationship influenced the soundness of bank management. The Japanese banks started to disclosethe amount of comprehensively defined non-performing loans for the first time in March 1996. Figure 4 presents the distribution of sampled banks according to their non-performing loan ratios (BAD). We may interpret the figures of non-performing loans as of March 1996 indicates the degree of risk the banks took during the latter half of the 1980s and the early 1990s.

The row of BAD in Table 2 presents the bad loan ratio for each category of *amakudari* status. The two groups of banks accepting *amakudari* officials from the MOF (i.e., MOF&BOJ and MOF) as of 1985 had almost twice higher bad loan ratio (4.145) than the bank totally independent from the *amakudari* relationship (i.e., NON). These differences are statistically significant at the 1% level. In contrast, the average level of bad loan ratio for the banks accepting *amakudari* from the BOJ (i.e., banks of BOJ status) is not significantly different from that of the NON. If we measure (ex post) risk by the bad loan ratio, the results are consistent with the hypothesis that the *amakudari* relationship undermines monitoring by the MOF.

Some may doubt the causality between *amakudari* and bank performance by stressing the fact that the MOF more often than not dispatch officials to the banks in financial distress in order to rehabilitate them. Certainly, there are some cases the MOF officials dispatched to private banks. However, almost all of the banks in distress had accepted *amakudari* officials long before they faced managerial difficulties. It would be fair to say that, contrary to what Aoki et al.(1994) argued, the *amakudari* was not effective in improving performances of the banks accepting it. The regulator tends to help incumbent managers of distressed banks to continue their operation. We conclude that the lack of effective monitoring by the outsiders is the most conspicuous feature of the governance in the Japanese bank management. This feature has produced inflexibility of bank management confronted by the serious crisis of non-performing loans since the early 1990s.[26]

6. The Vacuum of Governance in Bank Management

This paper has stressed that there existed a vacuum of governance in bank management. In other words, the hypothesis of managerial entrenchment was applicable to the Japanese banking industry. This section provides some evidence showing what has resulted from the independence.

Generally speaking, when they manage their firms independently from outsiders' control, corporate managers would (1) engage themselves in expansionism to display their managerial capability (Gorton and Rosen(1995)), and (2) delay structural changes after their policy is found to fail (Boot(1992)). We should take this second point into consideration in order to explain why the Japanese banking crisis since the early 1990s is so serious. In our opinion, the seriousness of banking crisis has come from the delayed response on the side of bank management to the accumulated non-performing loans rather than from the accumulation of non-performing loans in the banking sector. As has been pointed out by Lindgren, Garcia, and Saal(1996), the bank crisis is not peculiar to Japan. Surprisingly many countries experienced more or less bank crisis since 1980. However, Japan has taken too long time to deal with this problem without remarkable success. The main reason for this failure is the delayed response of bank management to the crisis. More specifically, the Japanese banks have hesitated to take the drastic restructuring policy necessary to deal with the difficulty of non-performing loans quickly. The government was unable to take policy measures to forcing banks to quickly reinforce their capital in the increasing non-performing loans.

6.1. Some International Comparisons

Figure 5 presents international comparison of banking restructuring during the first half of the 1990s based on the BIS Annual Report (1996). This figure shows that, except for the U.S., the profitability of commercial banks decreased in the first half of the 1990s compared with the later half of the 1980s in all of the major industrial countries including Japan. When we look at (1) the growth rate in the number of bank branches, (2) the growth rate in the total number of employees, and (3) the changes in wage index, Japan was unique in the sense that none of these measures decreases during the 1990s compared with the later half of the 1980s. In other words, the commercial banks in the other major industrialized countries downsized or reduced their scale of business after recognizing a fall in profitability during the 1990s. Thus, Figure 5 shows how the Japanese banks were hesitant to restructure their business in spite of decreasing profitability after 1990 in comparison with their rivals in most industrialized countries.

The second test is to examine to what extent salaries and wages (the staff costs) were responsive to fluctuations in profits in the banking industry. We suppose that, if managers are entrenched, they can stabilize their salaries regardless of profitability of their firms. Thus, the lower responsiveness of staff costs to profits is regarded as the higher degree of managerial entrenchment. Our statistical test is based on the data from the OECD 's Bank Profitability. We picked up the time series data of major 23 countries including Japan, and tried panel analysis (the random effects method).

The estimated equations are as follows:

$$SC_{it} = C_i + \alpha PR_{i\,t-1} \qquad (1)$$

$$SC_{it} = C_i + \alpha PR_{i\,t-1} + \beta PR_{i\,t-1} JPD, \qquad (2)$$

where SC, C, PR, and JPD are respectively the staff cost of the banking

sector, the constant term, the profit before tax of the banking sector, and the dummy variable taking 1 for Japan and 0 for other countries. The subscript i and t represent the cross-country element and the time-series element respectively. Using the GDP deflator of each country, the staff cost and the profit before tax are changed to the constant price basis. The data period for most countries including Japan is from 1979 to 1995, but for the countries such as Korea and Mexico, which became the OECD member countries quite recently, the data period is much shorter.

The results are summarized in Table 4. As Equation (1) shows, the staff cost was positively correlated with the one-year lag of profit before tax. However, when introducing the cross term of PR and the Japan dummy variable JPD (Equation (2)), we found this cross term was significantly offsetting the positive influence of PR on the staff cost (SC). This result shows that the correlation between the staff cost and profitability was uniquely low in Japan compared to the international standard.

In fact, uniqueness of the Japanese banking sector is observed in the relationship between Figure 6 and Figure 7. As seen in Figure 7, profitability of the Japanese banking sector has been declining steadily in the 1990s. However, its staff cost has an upward trend in the same period. This phenomenon suggests delayed restructuring of the Japanese banking sector.

The third international comparison is the relationship between gross income, which is the sum of interest and non-interest incomes, and operating expenses. It would be reasonable to assume that the gross income determines the operating expenses such as staff costs and property costs. However, under the entrenched management, operating expenses are determined independently from the gross income situation.

The data source of each country's banking sector and the estimation method are the same as the second test above. The basic equation is represented by the following equation:

$$OP_{it} = C_i + \alpha GI_{i\,t-1}, \qquad (3)$$

where OP, C, and GI are the operating expenses, the constant term, and the gross income respectively. We add the cross terms of each country dummy with the gross income GI to the basic equation (3). Thus,

$$OP_{it} = C_i + \alpha GI_{i\,t-1} + \beta GI_{t-1} DUM, \qquad (4)$$

where β, GI, and DUM are scalars of coefficients, gross incomes of respective countries, and country dummy variables. Among 23 sampled countries, the United States is dummied out in the equation (4). This means that the parameter α represents the coefficient of GI for the United States and the parameter β represents the differences in sensitivity of OP with GI between the United States and the other countries.

The estimation results are found in Table 5. In Equation (3) we observe that the correlation between the operating expenses and the one-year lag of the gross income is significantly positive. Equation (4), however, shows that among 22 countries the estimated coefficients of gross income of 12 countries including Japan are significantly different from that of the United States. And in most countries, the coefficients are smaller than that of the United States. This suggests that in most countries the bank operating expenses were less sensitive to changes in the gross incomes than was the case in the United States. Especially, Japan's coefficient is much smaller compared with that of the United States. Actually the magnitude of Japan's own coefficient turns out to be significantly negative. This relationship between the operating expenses and the gross income in the Japanese

banking sector is also observed in Figure 8. According to this figure, the operating expenses have been steadily increasing in spite of the declining income stream in the 1990s.

The international comparisons in this subsection suggest that the behavior of the Japanese banking sector is unique in the sense that business expansion was not ceased in spite of the structurally depressed banking business situations in the first half of the 1990s.

6.2. Adjustment Speed of Capital Stock

Finally, we examine how sensitively the financial sector in Japan has adjusted its physical capital stock responding to changes in the real output in comparison with other sectors in Japan, particularly with the manufacturing sectors. Our basic assumption is that in each industry net investment expenditure IN_t is determined by a simple stock adjustment principle:

$$IN_t = \lambda (K_t^* - \theta K_{t-1}), \qquad 0 < \lambda, \ \theta \leqq 1 \qquad (5)$$

where λ and θ are the speed of adjustment and the optimal operating rate, respectively, and K_t^* is the desired level of capital stock at the period t determined by the history of output level Q_{t-i} in the following way.

$$K_t^* = v \sum_{i=0}^{n} \gamma_i Q_{t-i}, \qquad \sum_{i=0}^{n} \gamma_i = 1 \qquad (6)$$

where v is the capital/output coefficient. We can derive the adjustment speed in capital stock λ for each industry by assuming v is equal to an average of the actual capital/output coefficient from the time series regression with specific structure of lag pattern.

Adding the depreciation term to the above equations, the equation for gross investment I_t is obtained.

$$I_t = \lambda(v\sum_{i=0}^{n}\gamma_i Q_{t-i} - \theta K_{t-1}) + \delta K_{t-1}$$

$$= \lambda v\sum_{i=0}^{n}\gamma_i Q_{t-i} + (\delta - \lambda\theta) K_{t-1} \quad (7)$$

Finally we specify the estimation model as follows.

$$I_t = C + \sum_{i=0}^{n}\alpha_i Q_{t-i} + \beta K_{t-1}, \quad (8)$$

where

$$\lambda v\gamma_i = \alpha_i, \quad \delta - \lambda\theta = \beta \quad (9)$$

To estimate the parameter $\sum_{i=0}^{n}\alpha_i$, the sum of the lag coefficients, our regressions are run utilizing two distributed lag models such as Almon lags and Shiller lags. The data is quarterly basis from 1974.Q4 to 1997.Q1 for each industry including finance & insurance which consists of commercial banks, insurance, and others. We divide the sample period into two parts; one is from 1974.Q4 to 1989.Q4, and the other is from 1990.Q1 to 1997.Q1 because we are interested in changes in stock adjustment speed between the two time period. Until 1989 most industries experienced relatively steady growth in output levels, while since 1990 the output growth has been either stagnant or declining because of the "bubble burst."

We estimated the above stock adjustment equation for fourteen industries including the aggregated manufacturing sector to obtain the specific value of adjustment speed λ. Table 6 and 7 respectively summarize the estimated results based on the Almon lag method[27] and the Shiller lag technique.[28]

The overall performance of the estimated functions varies among industries. As far as the parameter $\sum_{i=0}^{n}\alpha_i$ is concerned, we were unable to obtain significantly positive sum of the lag coefficients for some industries.

Fortunately, the regression results for Finance & Insurance is statistically significant for 3 cases among 4 regressions. Moreover, as for the manufacturing sectors, the sums of the lag coefficients are significantly positive especially in the case of the Almon lag method.

Figure 9 presents those industries whose sums of the lag coefficients are significantly positive in both periods as a result of the Almon lag estimation. In this figure the left and right columns for each industry present the adjustment speed during the period from 1974.Q4 to 1989.Q4 and the period from 1990.Q1 to 1997.Q1 respectively. It is noteworthy that all sectors in Figure 9 but Finance & Insurance increased their adjustment speed during the period after 1990 when they experienced either declines or stagnation in output levels. In contrast with this, Finance & Insurance decreases the adjustment speed during the period after 1990.

These results suggest that the financial services industry was less sensitive to the necessity of downsizing their production capacity in the face of stagnation in output levels than the manufacturing industries that have continued to compete with foreign rivals in the global markets since the 1960s. We claim that this hesitation of the financial services industry including banking in restructuring their business comes from the vacuum of managerial governance we have explained in the previous sections.[29]

7. Revelation of vulnerability - nature abhors a vacuum

As far as investors in the financial markets believe in the government capability of implementing the traditional safety net, the vulnerability of the banking sector the vacuum of management governance has fostered would

not reveal itself. Although investors had recognized deterioration of bank performance due to rapid increases in non-performing loans, they trusted that the traditional safety net would protect them from losses associated with bank failures in the end. Thus, they did not need to differentiate good banks from bad ones in the capital markets.

However, as the non-performing loan problem dragged on in the banking sector, the traditional safety net apparently reached a dead end incurring distrust of investors about government capability to bail distressed banks out. Still major banks continue to be assigned by the government an important role of bailing out weakened peers following the traditional safety net in Japan. However, as we have pointed out, the DIC, the semi-public organization, has remarkably increased its role in the framework of the Japanese safety net. This fact signals that the traditional safety net which major banks bear the burden of bailing distressed banks out does not smoothly work any more.

The Japan premium shows to what extent Japanese banks pay higher interest rate in the international inter-bank money markets than foreign banks do. Thus, this premium reflects investors' evaluation of Japanese banks relative to their foreign rivals. The higher Japan premium suggests investors are more seriously concerned with capacity of Japanese banks to repay their debt.

Figure 10 presents movements of the Japan premium which is defined by subtracting the London inter-bank offered rate (LIBOR) from the Tokyo inter-bank offered rate (TIBOR) with respect to 3 month dollar. The TIBOR is the average of inter-bank money market rates for sixteen Japanese and two foreign banks (Barclays and Citi) surveyed by the Federation of Bankers

Associations of Japan, the two highest and the two lowest banks being excluded. Since the two foreign banks have enjoyed lower interest rate than Japanese banks during the last several years, the TIBOR can be regarded as the average offered rate for Japanese banks in Tokyo. On the other hand, the LIBOR is the average of London inter-bank money market rate for major sixteen banks including three Japanese banks (Tokyo-Mitsubishi, Fuji, and Sumitomo Trust) cutting off the highest four and the lowest four from the average. Nowadays, the three banks are excluded from the LIBOR because the offered rates for them are substantially higher than the rates for the foreign banks in London. Thus, we may interpret the difference between TIBOR and LIBOR as a measure to what extent Japanese banks are negatively evaluated compared with their foreign rivals.[30]

According to Figure 10, the positive Japan premium was not observed until the end of September 1995. The Japan premium at the end of September (September 29) was only 1.042 basis point. However, the premium made a jump to 20.313 basis point on October 2. This abrupt jump was caused by the announcement on September 29 that the U.S. authority discovered Daiwa Bank's wrongdoing in New York. The MOF was found to be awkward at dealing with this Daiwa case. This fact also contributed to the market turbulence.[31] Associated with the increasing number of bank failures in the summer of 1995, this scandal triggered the skepticism in financial markets of the government capability to stabilize the banking system by means of the traditional safety net as they used to do. The abrupt jump of the Japan premium reflected the wide spread skepticism among investors.

The skepticism of investors about the traditional safety net led to the start of capital market mechanism of disciplining bank management. Once

the government lost investors' confidence in its capability of implementing the traditional safety net, investors were naturally motivated to severely monitor and discipline bank management. In short, the capital market started to fill the vacuum that existed in the framework of governance in bank management. In order to "calm down" the capital market, the government should have quickly strengthened monitoring and disciplining bank management. Unfortunately, the Japanese government did not recognize this development in the capital market neglecting to introduce effective measures to force banks to quick re-capitalization. Thus, the disciplining mechanism of capital market started at the worst time when most of banks were suffering from a large amount of non-performing loans.

It is noteworthy that the financial turmoil triggered off by the failures of Yamaichi, Hokkaido-Takushoku not only caused resurgence of significant Japan premium. With this turmoil, the investors started to differentiate individual banks according to their respective performances. Table 8 compares LIBOR (3 month US dollar) for Tokyo-Mitsubishi Bank with those of Sumitomo Trust Bank and Fuji Bank during the two time periods before and after November 1997. During the time period from September 1, 1995, to October 31, 1997, the market did scarcely differentiate offering interest rates for these three Japanese banks. However, Since the beginning of November of 1997, the inter-bank money market has differentiated the banks. Specifically, we observed significant divergence between LIBOR for Tokyo-Mitsubishi and those for the other two banks. This change in the market attitude toward Japanese banks suggests that since the late 1997, the investors have no more believe in the effectiveness of the traditional safety net which used to make it unnecessary for them to evaluate soundness of

individual banks based on their respective performances.

It is natural that the disciplinary mechanism of the capital market was severe and rather destructive in this situation. Some people are criticizing the capital market for its brutal and cruel manners to deal with distressed banks. Some go so far as to argue for suppressing the capital market to prevent destructive impact on the banking system. However, they should note that the government has for long neglected to fill the vacuum in the governance of bank management, and that the capital market started to fill the vacuum just at the worst timing. In order to avoid the destructive working of the capital market, the government should have committed itself to fill the vacuum in place of the capital market.

After jumping to significantly positive level at the beginning of October 1995, the Japan premium remained positive until November 1997, when the Japanese banking sector faced the second attack as shown by Figure 10. The dragging forbearance policy by the government accounted for this Japan premium phenomenon. After the financial turmoil at the end of 1997, the government took some emergent policy measures to regain the financial stability. In particular, in March 1998 the government inject the "public funds" of ¥1.8 trillion into major 21 banks' capital based on the "Emergency Law for Stabilizing Financial Functions" which became effective in February 1998. Despite these emergency measures taken by the government, the Japan premium has not yet disappeared. Rather, the premium has increased after the capital injection in March 1998.[32]

Obviously, the Japanese government failed in bringing out the positive response from the capital market. This is because the emergency policy measures since the beginning of 1998 was unable to convince investors that

the government would truly part with the forbearance policy to fill the governance vacuum. The capital market requires the Japanese banking system to be more rationalized through drastic restructuring. However, from investors' viewpoint, the emergency policy of injecting public funds into bank capital without properly considering individual banks true performance was nothing but the policy of protecting inefficiently managed banks.

Any policy to cope with the current bank crisis would not be successful without positive responses from the capital market. The government and the capital market are struggling with each other to fill the governance vacuum in the bank management. If the government wins, the market will be calmed down. However, if the government loses this struggle, the market will become more cruel for the time being. This is a totally new situation the government has never experienced.

8. Concluding remarks

This paper is an overview of the governance structure in the Japanese banking industry. We stressed that the bank management has been independent from outsider's control. Even the Ministry of Finance have not effectively monitored and disciplined bank management from the viewpoint of taxpayers. Thus, we have not resolved the issue "who monitors the monitor" in the Japanese financial system. We may say there exists a vacuum in the governance of bank management.

The vacuum of governance in the banking sector is responsible for the delayed restructuring in the banking industry which has been suffering from the bad loan problem since the beginning of the 1990s. Quite recently the

Japanese government started policy of introducing the prompt corrective action rule in April 1998 and of ordering banks to submit explicit time schedule of managerial restructuring under the condition that the government injects the public funds into banks capital. These policy measures seem to have at last induced hesitant banks to start restructuring their businesses. This fact in itself tells us that Japanese banks had no strong incentive to drastically reform their way of business on their own initiative.

NOTES

1. We define all depository financial institutions as banks including not only the city banks and regional banks, but also various cooperative credit banks.

2. The group of Major Banks consisted of city banks, three long-term credit banks, and seven trust banks. Since Mitsubishi Bank and Tokyo Bank merged in April 1996, and Hokkaido Takushoku went bankrupt in November 1997, at present the number of city banks is nine

3. The Major Banks and the regional banks began to disclose figures for non-performing loans in 1993. However, until March 1996, the Major Banks did not disclose the non performing loans belonging to category (c), and the regional banks disclosed only category (a).

4. The credit cooperatives seem to be particularly fragile. According to Table 1, the bad loans/total loans ratio is 12 per cent for the credit cooperatives, or nearly three times as high as that for the Major Banks, which is estimated at 4 per cent. As for shinkin banks, it was reported that if they were to subtract non-performing loans from their equity capital, almost 90 percent of these banks would be unable to satisfy the domestic standard of capital adequacy requirement (4 percent) imposed on commercial banks in Japan (Nihon Keizai Shimbun, May 16, 1996). This newspaper report suggests the serious difficulty of non performing loans for the cooperative banks.

5. Under the MOF's guidance, the banks have formed the Cooperative Credit Purchasing Corporation (CCPC) to help themselves write off bad loans. The banks sell bad loans to the CCPC at discount prices. Banks are

required to fund the purchase of the loans that they bring to the CCPC. The essential purpose of the scheme is to make losses on non-performing loans explicit so that banks obtain tax relief. When a bank sells non-performing loans to the CCPC at discount prices, the amount of bad loans is reduced by that amount in the bank's balance sheet. However, if the CCPC is unable to collect the loans within several years, the selling banks must take them back. The total amount of non-performing loans sold by the banks to the CCPC from the second half of fiscal year 1992 to the first half of fiscal year 1997 is ¥14.0 trillion in book value and ¥5.5 trillion. However, more than 80% of the loans sold to the CCPC have not yet been collected by September 1997. Thus, it would be safe to consider the amount of bad loans sold to the CCPC as still remaining on the balance sheet of the banking sector, although the whole amount of the loans sold to the CCPC is deleted from the non-performing loans in Table 1.

6. A note "The Japan Premium: Work in Progress" presented by Joe Peek and Eric S. Rosengren to the NBER-Japan Project on April 17-18, 1998 gives us the information about changes in the Japan premium.

7. It should be noted, as Gibson(1995) points out, the deterioration of bank performance would weaken competitiveness of industrial firms, particularly those heavily depending on bank credit, by increasing cost of capital for them. This bad influence of the bank crisis may endanger the long-run growth capability of the Japanese economy. However, we may be optimistic about the bad influence on the major companies, because they have substantially reduced their dependence on bank credit since the early 1980s. According to the BOJ statistics, the average of blue chip companies' dependence on bank credit in their total finance was just 6% and 5%

respectively during the second half of the 1980s and the first half of the 1990s whereas their dependence on bank credit was higher than 30% during the high growth era until the mid 1970s (The Bank of Japan, Analysis of Major Companies Management). The major companies would be able to raise funds in international capital markets independently from the inter-mediation capability of Japanese banks.

8. The Japanese government injected the public funds of ¥1.8 trillion into 21 major banks (nine city banks, three long-term credit banks, six trust banks, and three big regional banks) by buying either preferred stocks or perpetual subordinated debt at March 1998 with a view to mitigating the credit crunch. This injection is estimated to have increased equity capital of those banks by 5.14%. It is extremely ambiguous whether this policy was really effective in mitigating the credit crunch. Furthermore, it remains to be investigated whether or not the direct injection of public funds into bank capital would be consistent with the long-term objectives of restructuring the Japanese banking industry.

9. Total abolition of the financial safety net would strengthen the incentives of depositors and investors to monitor and discipline bank management. However, since most of depositors are small-size wealth-holders enjoying no economy of scale in collecting and analyzing information about bank management and since there exists a "free-riders" problem to hinder efficient information production, it would be unrealistic to totally depend on the market discipline to keep stability of the banking system. As Dewatripont and Tirole(1994) argue, we need to have a sort of the financial safety net in order to protect small-size investors in the banking sector.

10. Until the end of the 1980s, the number of banks that came close to

failing was small, with the largest rescue program involving not a bank but Yamaichi Securities Company in 1965. In this rescue, coordinated by the MOF, the BOJ provided emergency loans of ¥28.2 billion to Fuji Bank and two other banks which functioned as conduits supplying financial support to Yamaichi.

11. In 1965, for example, Kawachi Bank, a small regional bank in financial distress, was absorbed by Sumitomo Bank, while in 1978 Mitsui Bank absorbed Toto Bank, which had suffered from stagnant performance for a long time. In both cases, the rescue programs were implemented under the administrative guidance of the MOF. Actually, until the late 1960s, there were a few cases in which depositors were forced to bear some part of losses associated with bank failures. See Yamawaki(1996).

12. We may regard the protection given to shareholders in compensation for their silence on bank management. In reality, the shareholders have been rather similar to debt-holders in the governance structure of bank management. This is evidenced by the fact that a dividend on bank shares has been extremely stable regardless of bank performance. For example, the profits of city banks were either very small or negative during the five years from 1993 to 1997 mainly due to large loan loss provisions. Nevertheless, the city banks continued to pay almost constant amount of dividends to their shareholders. The total amount of profits for the city banks was less than minus ¥1.8 trillion for the five years. On the other hand, the total amount of dividend paid out by the city banks was a little larger than ¥1.0 trillion for the same five years. If they had not paid the dividend at all, the total amount of capital would have been larger by 10% for those banks than the actual amount at March 1998.

13. Unfortunately, we have observed a number of cases that suggest a forbearance policy on the part of the authorities during the early 1990s. For example, we may cite the case of Cosmo Credit Cooperative, which failed and was taken over by Tokyo Kyodo Bank in March 1996. Although Cosmo had already fallen into serious difficulty, with negative profits in early 1992, the Tokyo metropolitan government, responsible for monitoring management of credit cooperatives located in Tokyo allowed it to conceal its actual bad situation by manipulating accounts (Nihon Keizai Shimbun, May 7, 1996). The failure of Musashino Shinkin Bank is also an example of the forbearance policy that came to light in 1996. Musashino Shinkin had been in trouble since 1993 and the MOF was in charge of examining the bank's account statements before publication. The MOF reportedly allowed the bank to engage in window dressing to record positive profits even as of March 1996, when the estimated amount of problem loans was nearly 70 per cent of total loans. The MOF guided the bank to conceal its difficulties by allowing managers to manipulate financial statements. In September 1996, the MOF decided to introduce an explicit system of ordering banks in trouble to improve their management based upon officially announced criteria (Nihon Keizai Shimbun, October 11, 1996).

14. Needless to say, before adopting the policy of paying off deposits, the MOF should introduce more perfect disclosure of individual banks' bad loans to help investors outside the deposit insurance coverage to select sound banks.

15. The MOF partially abandoned branch administration by allowing regional banks and shinkin banks to freely increase the number of branch offices in May 1993. At that time, the MOF announced that the branch

regulation for city banks would be gradually liberalized while taking into account the influence on small and medium sized financial institutions. In May 1995, the MOF totally liberalized the regulation regarding the number of branch offices for all banks.

16. A few recent cases exemplify the difficulties the MOF faces in using traditional bailing-out policies. In the summer of 1992, Toyo Shinkin Bank, located in Osaka, was broken up because of insolvency due to bad loans. The MOF reportedly wanted Sanwa Bank, a leading city bank, to absorb it in the traditional fashion, but was unable to persuade Sanwa to do this. Instead, Toyo Shinkin was broken up into a number of pieces, each of which was absorbed by a different financial institutions. In the process, the Deposit Insurance Corporation paid ¥20 billion to Sanwa, which absorbed the largest part and played a major role in the reorganization. Another event signaling that traditional methods are running into trouble occurred early in 1994. Three local banks in the Tohoku area jointly announced a plan for a merger, another typical MOF bail out method. One of the banks had a serious bad loan problem, and many parties, including the MOF, were pessimistic about its future viability. The merger plan, which was undoubtedly the result of MOF administrative guidance, had to be abandoned following fierce resistance from employees of the relatively sound banks involved. Some of the banks' managers also reportedly argued against the merger.

17. The MOF's administration of branch offices was another significant area of regulation. During the high growth period, when almost all deposit interest rates were under regulation, branch offices were an important means of non-price competition for banks and essentially the

vehicle by which they competed for deposit funds. Under the MOF's administration, banks were not free to either expand or change the location of their branch networks. In permitting new branches, the MOF reportedly gave preferential treatment to small banks. The number of branches of small-scale banks increased more rapidly than did that of city banks, both during and after the high growth period. See Horiuchi(1984).

18. Aoki(1994) argues, by assuming asymmetric information about banks' monitoring activities, that the rent was necessary to motivate private banks to faithfully and efficiently monitor their borrowers. He suggests that the long-term relationship between major banks and borrower firms, called the "main bank relationship," in Japan was crucially dependent on the competition-restricting regulations. However, the restricting full-scale competition was not always necessary to motivate banks to supply a "high quality" level of monitoring. The laissez-faire market would be able to motivate banks to conduct good monitoring. See Klein and Leffler(1981).

19. Even now, the MOF manipulates its administrative guidance with a view to induce private banks to collaborate with its rescue program. In 1994, for example, Mitsubishi Bank obtained preferential treatment from the MOF in exchange for rescuing Nippon Trust Bank, which had been seriously damaged by the accumulation of a huge amount of bad loans since the early 1990s. Mitsubishi Bank was 'rewarded' by being allowed to pursue a full complement of trust banking business through Nippon Trust, which is now its subsidiary. Other banks are prohibited by the MOF from engaging in full-line trust banking business through their trust bank subsidiaries. The same story is true of the case in which Daiwa Bank financially supported Cosmo Securities Company, which was seriously damaged by the depression in the

securities market after the "bubble" burst at the beginning of the 1990s. Cosmo has been a subsidiary of Daiwa Bank. However, Cosmo retained its stock brokerage business which has not yet been permitted to the securities subsidiaries of other banks.

20. Frankel(1984) explains the process of the Yen/Dollar agreement. Takeda and Turner(1994) discusses the relationship between the internationalization of Japanese financial markets and domestic financial deregulation in great detail.

21. The broadly defined capital includes not only equity capital (book value), but also some reserve items.

22. The MOF amended the capital adequacy regulation in 1986 when the accounting rules governing bank financial statements were changed. Through this amendment, the MOF probably intended to make the capital adequacy regulation more realistic. It is unclear whether the MOF was yet aware of the increasing need for prudential regulations in banking as of the mid 1980s. The new capital adequacy rule required banks' broadly defined capital to be at least 4 per cent of total assets, hardly a stringent requirement. Since 1987, banks with branches or offices in foreign countries have been subject to the BIS capital adequacy rule, but other banks continue to face only this domestic capital adequacy requirement of 4 per cent.

23. There are a number of hypotheses to explain why the Japanese financial system has accepted the *amakudari* system. Rixtel(1994) provides a useful overview of these hypotheses. Neglecting all other hypotheses, this paper concentrates on analyzing *amakudari* from the viewpoint of effectiveness of the financial safety net.

24. Kane(1989) points out there exists a similar agency problem in the

U.S. banking system. This problem was responsible for the S&L mess during the 1980s in the United States.

25. Since the BOJ has not played a significant role with respect to prudential regulation, this result is plausible (Horiuchi and Shimizu(1998)).

26. Since 1997, the bank crisis in Japan has been centered on the major bank group consisting of big city banks. The most emergent policy agenda for the government is how to strengthen capital basis of those big banks suffering from the serious non-performing loan problem. As is well-known, big banks have been mostly independent from the *amakudari* relationship with the regulators. In contrast, the group of regional banks appears to be relatively sound partly because the weakest ones had disappeared until the end of 1997. Thus, the negative influence of *amakudari* on soundness of bank management does not explain the whole story of the current bank crisis in Japan.

27. The Almon lag specification used for estimation is as follows; the number of terms in the polynomial is 2 degree, the number of distributed lags is 8 quarters, and the endpoint constraint is FAR.

28. For the Shiller lag estimation, we use a 2nd degree of differencing, 8 quarter-lags, a FAR endpoint constraint and a prior variance on the differenced coefficients equal to 0.1.

29. Peek and Rosengren(1998) point out that some Japanese big banks restructure their business in inefficient ways. According to their analysis, Japanese banks increased their lending to the U.S. real estate sector in the early 1990s. At the peak in 1992, their U.S. subsidiaries held around 20% of all commercial real estate loans in the U.S. banking sector. However, they cut back their lending in the U.S. in response to a sharp decline in real estate

prices in Japan even though the U.S. real estate prices were rising. At the same time, Japanese banks expanded their lending to the domestic market where prices were plummeting. Thus, they transferred their loans from more profitable sections to less profitable, and much more risky sections.

30. Both LIBOR and TIBOR do not show the offered rates for individual banks. But apparently Japanese banks are not greatly differentiated from each other. For example, as on June 22, 1998, the Japan premium defined by (TIBOR-LIBOR) was 20.834 basis point. On the same day, the inter-bank offered rate was 5.875% for Tokyo-Mitsubishi, and 5.9375% for both Fuji and Sumitomo Trust respectively in London. The difference was only 6.22 basis point between Tokyo-Mitsubishi and the other two banks. Meanwhile, the offered rate for all the foreign banks was the same at 5.687% on June 22, 1998.

31. On October 16, 1995, the public hearing with regard to Japan's financial system was held at the House of Representative in Washington, D.C. This public hearing seemed to promote skepticism of markets against the capability of Japanese financial authorities. The Japan premium went up further immediately after the public hearing, reaching the unprecedented high of 52.605 basis point on October 25.

32. Interestingly, from March 13 to April 2, 1998, the divergences of LIBOR between Tokyo-Mitsubishi and the other two banks disappeared while the Japan premium remained significantly positive. This suggests that the inter-bank money market regarded the capital injection by the government in March 1998 as a partial revival of the traditional safety net without the definite resolution of the banking problem as a whole in Japan.

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Table 1 Non-performing Loans (NPL) in the Banking Sector
(¥ 100 billion)

	March 1996	March 1997	March 1998
Major banks			
(a) Total loans	3,918.5	3,953.1	3,658.7
(b) NPLs	218.7	164.4	145.2
(b/a: %)	(5.58)	(4.16)	(3.97)
(c) Provision	103.5	93.9	136.0
(c/a: %)	(2.64)	(2.38)	(3.72)
Regional banks			
(a) Total loans	1,896.8	1,902.9	1,872.6
(b) NPLs	66.4	53.5	50.1
(b/a: %)	(3.50)	(2.81)	(2.68)
(c) Provision	29.5	29.5	42.1
(c/a: %)	(1.56)	(1.55)	(2.25)
Total cooperatives			
(a) Total loans	1,312.1	1,285.4	1,353.4
(b) NPLs	63.0	61.1	54.4
(b/a: %)	(4.80)	(4.75)	(4.02)
(c) Provision	17.6	26.6	40.9
(c/a: %)	(1.34)	(2.07)	(3.02)
Shinkin banks			
(a) Total loans	696.0	702.0	704.1
(b) NPLs	32.0	32.4	32.4
(b/a: %)	(4.60)	(4.62)	(4.60)
(c) Provision	10.3	16.2	26.8
(c/a: %)	(1.48)	(2.31)	(3.81)
Credit cooperatives			
(a) Total loans	173.7	172.1	150.9
(b) NPLs	20.5	21.2	12.0
(b/a: %)	(11.80)	(12.32)	(7.95)
(c) Provision	1.8	3.0	4.1
(c/a: %)	(1.04)	(1.74)	(2.72)
Total			
(a) Total loans	7,127.4	7,141.4	6,884.7
(b) NPLs	348.0	279.0	249.8
(b/a: %)	(4.88)	(3.91)	(3.63)
(c) Provision	150.5	149.9	219.0
(c/a: %)	(2.11)	(2.10)	(3.18)

(Note) In this table, the non-performing loans are defined by the old standards. Those banks which went down during the sample period are excluded from the table.
(Source) Federation of Bankers Associations of Japan, Analysis of Financial Statements of All Banks.

Table 2: *Amakudari* and performance of regional banks
Period 1985-1989

	MOF&BOJ (41)	MOF (43)	BOJ (21)	NON (20)
EQT	2.849***	3.008***	3.390	3.411
GAS	10.945	9.927	10.526	9.815
PRO	8.913	9.087	8.641	8.610
BAD	4.145***	4.145***	2.205	2.200

(Note) The asterisks *** , **, and * indicate the figures are different from the those of "NON" significantly at 1%, 2.5%, and 5% respectively. Panel A and B delete Daiko Bank because of its abnormal performances during the 1980s. The figures in parentheses are the numbers of banks belonging to respective categories.

Table 3: Prudential Regulations as of 1974
The MOF designated the following items as the desirable standards under administrative guidance

1. Loans/deposits ratio is to be no higher than 80 per cent.
2. (a) Liquid assets/deposits ratio is to be higher than 30 per cent.
   (b) For the banks that do not satisfy (a), increment of liquid asset/increment of total deposits ratio is to be higher than 30 per cent.
3. Ratio of current expenses (excluding tax) to current revenue is to be constantly decreased. (Until 1973, the MOF indicated a maximum level of 78 per cent for this ratio.)
4. Annual dividend per share is to be less than 12.5 per cent of the face value of the share.
5. Broadly defined capital/deposits ratio should be higher than 10 per cent.
6. The amount of loan to a borrower is to be less than
   (a) 20 per cent of the bank's equity capital for the city banks and regional banks;
   (b) 30 per cent of the bank's equity capital for the long-term credit banks and the trust banks;
   (c) 40 per cent of the bank's equity capital for the foreign exchange banks.

(Note) The MOF has since altered prudential regulations to some extent. For example, as the Banking Law was substantially revised in 1982, ceilings on credit to a borrower were introduced by the Banking Law; the total amount of credit to a borrower should be less than 20 per cent of the bank's equity capital.
(Source) The Banking Bureau of the MOF.

Table 4 The relationship between staff cost and profit

Dependent variable : staff cost

Independent Variable	Equation(1)	Equation(2)
Const.	25,778.4 (5.04) **	25,963.7 (5.12) **
PR	0.514 (20.83) **	0.520 (20.95) **
PR×JPD		-0.328 (-1.78) *
$\overline{R^2}$	0.9791	0.9792

(Notes) PR is the one-year lag of profit before tax; JPN is a dummy variable taking 1 for Japan and 0 for other countries. The figures in parentheses are t-statistics. Staff cost and profit before tax are the real term. The asterisks ** and * indicate the levels of significance at 5% and 10% respectively.

(Source) OECD, Bank Profitability-Financial Statements of Banks.

IMF, International Financial Statistics.

Table 5: The relationship between operating expenses and gross income

Dependent variable: Operating expenses

Independent Variable	Equation(3)	Equation(4)
Const.	0.010 (5.12) **	0.017 (7.71) **
GI	0.479 (10.69) **	0.383 (5.22) **
GI×JPD		-0.691 (-3.02) **
GI×GED		-0.224 (-1.87) *
GI×FRD		-0.402 (-2.19) **
GI×UKD		-0.039 (-0.42)
GI×CAD		-0.133 (-1.35)
GI×AUD		-0.336 (-2.20) **
GI×TUD		0.282 (3.61) **
GI×BED		-0.492 (-2.70) **
GI×POD		-0.148 (-1.58)
GI×DED		-0.176 (-2.10) **
GI×SED		-0.006 (-0.06)
GI×FID		0.091 (0.84)
GI×SWD		-0.388 (-2.99) **
GI×GRD		-0.128 (-1.13)
GI×SPD		-0.051 (-0.56)
GI×ITD		-0.125 (-1.21)
GI×KOD		-0.120 (-0.96)
GI×NED		-0.234 (-1.85) *
GI×MED		0.182 (2.24) **
GI×LUD		-1.331 (-4.69) **
GI×NOD		0.008 (0.09)
GI×ICD		0.242 (3.15) **
$\overline{R^2}$	0.8260	0.8289

(Notes) G1 is the one-year lag of gross income; JPD, GED, FRD, UKD, CAD, AUD, TUD, BED, POD, DED, SED, FID, SWD, GRD, SPD, ITD, KOD, NED, MED, LUD, NOD, ICD are dummy variables taking 1 for Japan, Germany, France, United Kingdom, Canada, Austria, Turkey, Belgium, Portugal, Denmark, Sweden, Finland, Switzerland, Greece, Spain, Italy, Korea, Netherlands, Mexico, Luxembourg, Norway, and Iceland respectively and 0 for other countries. Gross income and Operating expenses are the real term and are normalized by the year-average total assets. The figures in parentheses are t-statistics. The asterisks ** and *indicate the levels of significance at 5% and 10% respectively.

(Source) OECD, Bank Profitability-Financial Statements of Banks.

I MF, International Financial Statistics.

Table 6 Estimation of the stock adjustment type of investment function

—Almon lag method—

(1) Period: 1974.Q4-1989.Q4

	Const.	$\sum_{i=0}^{n} \alpha_i$	β	$\overline{R^2}$	v	λ
Manufacturing	-2,380,720 (-5.45) **	0.0800 (3.15) **	0.00101 (1.49)	0.923	2.698	0.030
Food Products	-125,910 (-1.39)	0.0202 (1.43)	0.02067 (10.89) **	0.902	1.584	0.013
Textiles	-34,653 (-0.30)	-0.0657 (-1.39)	0.03633 (10.26) **	0.801	3.939	-0.017
Paper & Pulp	-108,006 (-4.81) **	0.1820 (4.86) **	-0.00425 (-0.66)	0.798	4.066	0.045
Chemicals	-38,689 (-0.78)	0.1268 (2.78) **	0.00059 (0.06)	0.789	4.807	0.026
Metal Products	-98,196 (-2.50) **	0.0254 (1.78) *	0.02686 (19.34) **	0.936	2.607	0.010
General Machinery	-201,968 (-11.30) **	0.0581 (6.42) **	0.01596 (4.16) **	0.961	1.931	0.030
Electric Machinery	-52,912 (-2.10) **	0.0804 (6.99) **	0.00225 (0.28)	0.983	1.975	0.041
Transport. Equipment	-478,448 (-11.08) **	0.0593 (6.27) **	0.02706 (13.41) **	0.977	2.102	0.028
Electricity, Gas & Water	153,307 (0.38)	0.2534 (0.91)	0.00236 (0.20)	0.633	12.545	0.020
Finance & Insurance	300,983 (3.41) **	0.1610 (6.31) **	-0.07433 (-3.61) **	0.882	2.222	0.072
Real Estate	305,495 (2.47) **	-0.0841 (-4.26) **	0.07558 (9.95) **	0.903	1.044	-0.081
Transport & Communi.	199,109 (1.54)	-0.0085 (-0.38)	0.02241 (15.95) **	0.964	3.589	0.002
Services	-653,259 (-1.51)	0.0403 (1.32)	0.04386 (7.44) **	0.981	1.450	0.028

(2) Period: 1990.Q1-1997.Q1

	Const.	$\sum_{i=0}^{n} \alpha_i$	β	$\overline{R^2}$	v	λ
Manufacturing	-11,947,800 (-7.32) **	0.2838 (17.34) **	-0.01459 (-9.27) **	0.965	3.813	0.074
Food Products	3,558,740 (3.19) **	-0.3036 (-2.26) **	-0.01820 (-3.02) **	0.649	2.806	-0.108
Textiles	-260,338 (-1.22)	0.2019 (4.29) **	0.01072 (0.87)	0.850	7.011	0.029
Paper & Pulp	-362,075 (-3.49) **	0.5801 (11.87) **	-0.06586 (-22.65) **	0.962	4.953	0.117
Chemicals	594,843 (1.78) *	0.4652 (5.14) **	-0.08716 (-8.74) **	0.828	4.956	0.094
Metal Products	-1,202,830 (-6.88) **	0.4554 (12.48) **	-0.01057 (-4.57) **	0.953	4.800	0.095
General Machinery	-782,192 (-3.96) **	0.1332 (12.87) **	0.01109 (2.44) **	0.954	2.996	0.044
Electric Machinery	77,537 (0.24)	0.1726 (6.64) **	-0.04474 (-11.28) **	0.851	2.201	0.078
Transport. Equipment	-627,568 (-1.14)	0.1611 (4.84) **	-0.00328 (-0.42)	0.806	3.495	0.046
Electricity, Gas & Water	-706,658 (-0.55)	0.2327 (0.41)	0.01600 (0.78)	0.691	15.711	0.015
Finance & Insurance	385,865 (1.34)	0.1087 (1.71) *	-0.04303 (-2.23) **	0.203	1.868	0.058
Real Estate	2,939,190 (9.52) **	-0.2023 (-4.94) **	0.01908 (1.57)	0.722	1.890	-0.107
Transport & Communi.	-485,048 (-0.79)	0.2789 (2.46) **	-0.00949 (-1.09)	0.541	6.908	0.040
Services	-17,282,800 (-8.34) **	0.9271 (10.38) **	-0.06240 (-11.07) **	0.831	3.612	0.257

(Notes) The estimated equation is

$$It = C + \sum_{i=0} \alpha_i Q_{t-1} + \beta K_{t-1},$$

where I: business investment, v: capital-output ratio, C: constant term, λ : the adjustment speed of capital stock, Q: output, K: capital stock. The figures in parentheses are t-statistics. The asterisks ** and * indicate the levels of significance at 5% and 10% respectively.

Table 7. Estimation of the stock-adjustment type of investment function

—Shiller lag method—

(1) Period: 1974.Q4-1989.Q4

	Const.	$\sum_{i=0}^{n} \alpha_i$	β	$\overline{R^2}$	v	λ
Manufacturing	-1,969,520 (-3.48) **	0.0547 (1.64)	0.01657 (1.92) *	0.918	2.698	0.020
Food Products	-111,785 (-1.18)	0.0179 (1.21)	0.02086 (10.51) **	0.894	1.584	0.011
Textiles	123,732 (0.80)	-0.1288 (-2.07) **	0.03240 (7.54) **	0.798	3.939	-0.033
Paper & Pulp	-138,051 (-5.47) **	0.2341 (5.48) **	-0.01202 (-1.66)	0.801	4.066	0.058
Chemicals	-51,732 (-0.97)	0.1031 (1.83) *	0.00604 (0.47)	0.771	4.807	0.021
Metal Products	-104,844 (-2.23) **	0.0277 (1.63)	0.02683 (17.84) **	0.934	2.607	0.011
General Machinery	-208,861 (-9.93) **	0.0625 (5.06) **	0.01454 (2.87) **	0.958	1.931	0.032
Electric Machinery	-93,668 (-4.41) **	0.0534 (5.22) **	0.01893 (2.74) **	0.990	1.975	0.027
Transport. Equipment	-478,860 (-8.89) **	0.0593 (4.92) **	0.02703 (10.78) **	0.975	2.102	0.028
Electricity, Gas & Water	60,233 (0.13)	0.3206 (1.03)	-0.00046 (-0.03)	0.595	12.545	0.026
Finance & Insurance	310,434 (3.48) **	0.1714 (6.51) **	-0.07865 (-3.77) **	0.880	2.222	0.077
Real Estate	340,808 (2.64) **	-0.0906 (-4.39) **	0.07808 (9.81) **	0.898	1.044	-0.087
Transport & Communi.	147,855 (1.11)	0.0001 (0.00)	0.02225 (15.61) **	0.963	3.589	0.000
Services	-596,090 (-1.32)	0.0363 (1.13)	0.04416 (7.17) **	0.980	1.450	0.025

(2) Period: 1990.Q1 ~1997.Q1

	Const.	$\sum_{i=0}^{n} \alpha_i$	β	$\overline{R^2}$	v	λ
Manufacturing	-11,607,600 (-6.12) **	0.2801 (13.86) **	-0.01469 (-8.97) **	0.963	3.813	0.073
Food Products	5,348,530 (4.20) **	-0.5298 (-3.41) **	-0.01149 (-1.78) **	0.676	2.806	-0.189
Textiles	-214,854 (-0.92)	0.1864 (3.58) **	0.00920 (0.68)	0.831	7.011	0.027
Paper & Pulp	-447,672 (-3.49) **	0.6351 (9.86) **	-0.06985 (-18.19) **	0.960	4.953	0.128
Chemicals	323,465 (0.63)	0.5544 (3.69) **	-0.09655 (-6.09) **	0.790	4.956	0.112
Metal Products	-1,062,430 (-5.20) **	0.4202 (9.50) **	-0.01071 (-4.47) **	0.952	4.800	0.088
General Machinery	-890,073 (-3.99) **	0.1435 (11.15) **	0.01176 (2.49) **	0.964	2.996	0.048
Electric Machinery	-178,740 (-0.52)	0.2017 (6.61) **	-0.04849 (-13.37) **	0.914	2.201	0.092
Transport. Equipment	-738,689 (-1.21)	0.1590 (4.29) **	-0.00046 (0.05)	0.775	3.495	0.045
Electricity, Gas & Water	-703,230 (-0.48)	0.2318 (0.36)	0.01603 (0.68)	0.594	15.711	0.015
Finance & Insurance	517,961 (1.40)	0.0694 (0.78)	-0.02890 (-1.02)	0.000	1.868	0.037
Real Estate	3,131,500 (8.60) **	-0.2311 (-4.69) **	0.02678 (1.87) *	0.676	1.890	-0.122
Transport & Communi.	-252,251 (-0.38)	0.2306 (1.85) *	-0.00586 (-0.61)	0.485	6.908	0.033
Services	-15,055,200 (-4.74) **	0.8288 (5.99) **	-0.05612 (-6.41) **	0.803	3.612	0.229

(Notes) The estimated equation is

$$It = C + \sum_{i=0} \alpha_i Q_{t-1} + \beta K_{t-1},$$

where I is business investment, v is capital-output ratio, C is a constant term, λ is the adjustment speed of capital stock, Q is output, and K is capital stock. The figures in parentheses are t-statistics. For sub-sectors within manufacturing, the estimation period ends in 1996.Q1 instead of in 1997.Q1. The asterisks ** and * indicate the levels of significance at 5% and 10% respectively.

Table 8: Divergences of LIBOR (3 month US dollar) between Japanese major banks (%)

Period	SUMI-BOTM	FUJI-BOTM	JPN premium
September 1, 95-	0.00838	0.00446	0.10436
October 31, 97	(0. 1985)	(0.01564)	(0.06733)
November 3, 97-	0.10000	0.10040	0.35279
October 6, 98	(0.07342)	(0.07370)	(0.16539)

(Notes) SUMI, FUJI, and BOTM are Sumitomo Trust Bank, Fuji Bank, and Bank of Tokyo-Mitsubishi respectively. JPN premium is the Japan premium defined by subtracting LIBOR for Citi Bank from that for Bank of Tokyo-Mitsubishi. Figures in parentheses indicate standard deviations.

Figure 1 Several Definitions of Non-performing Loans

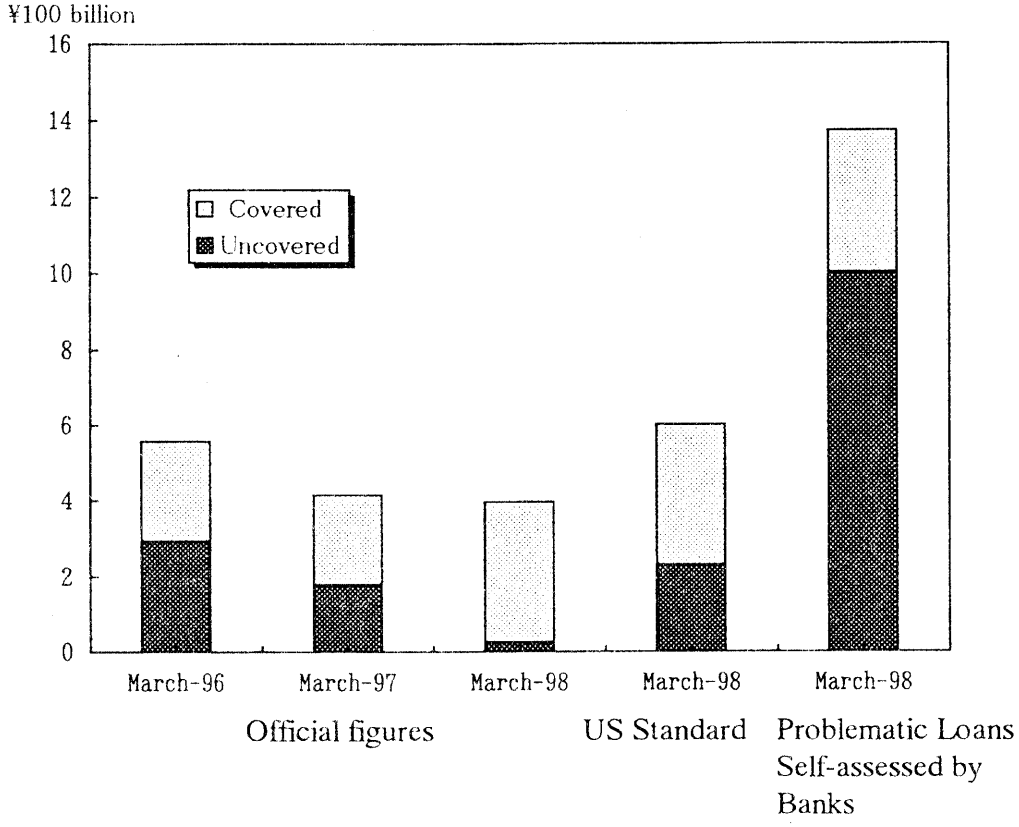
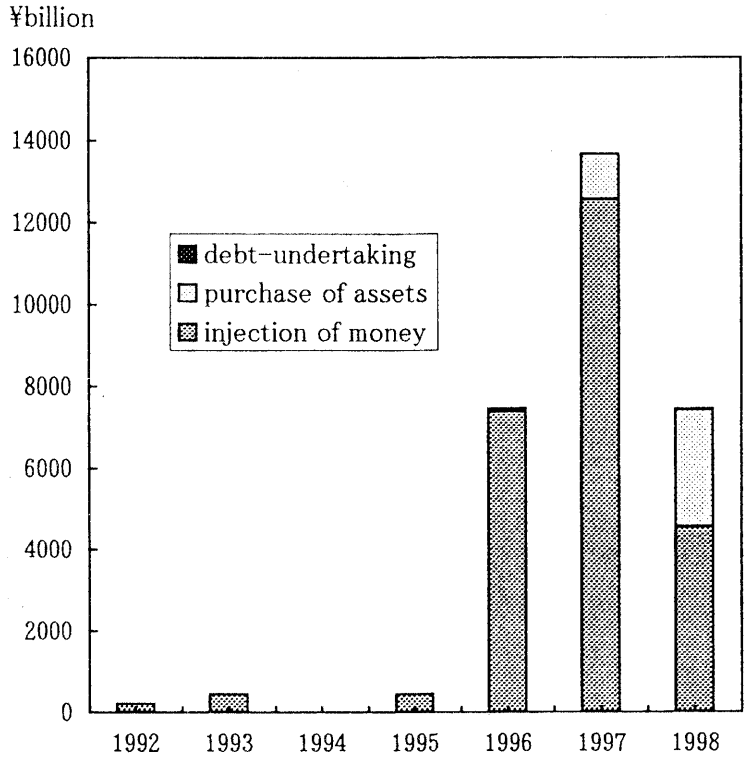


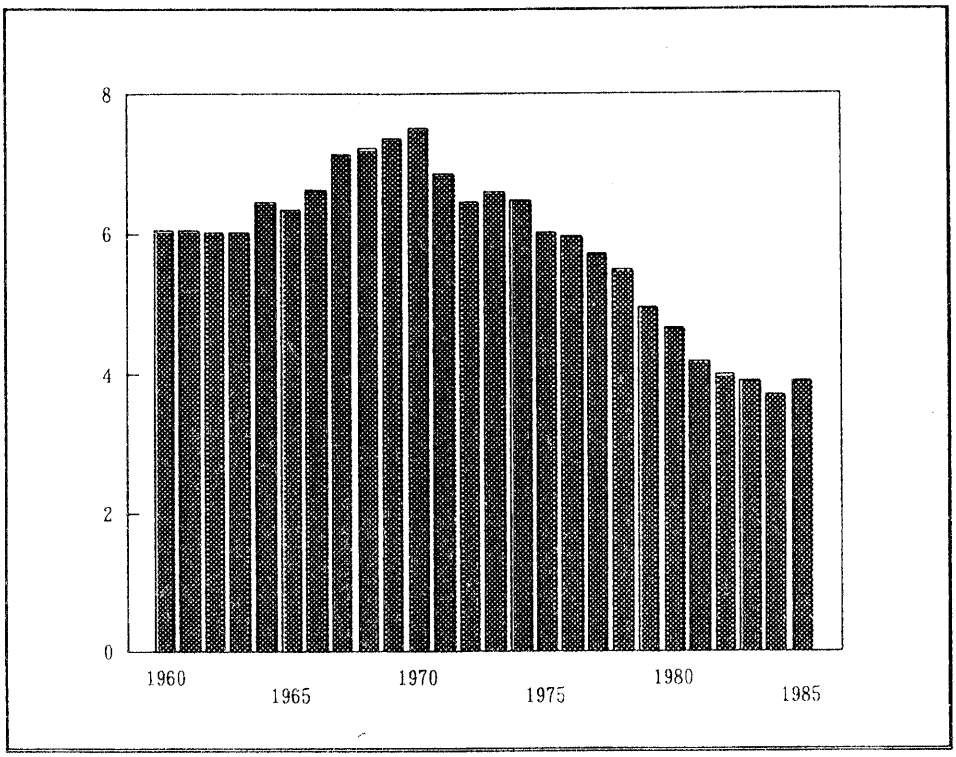
Figure 2 Financial Support by the DIC



(Notes) The figure in1998 is the sum until the end of May.
(Source) Federation of Bankers Associations of Japan.

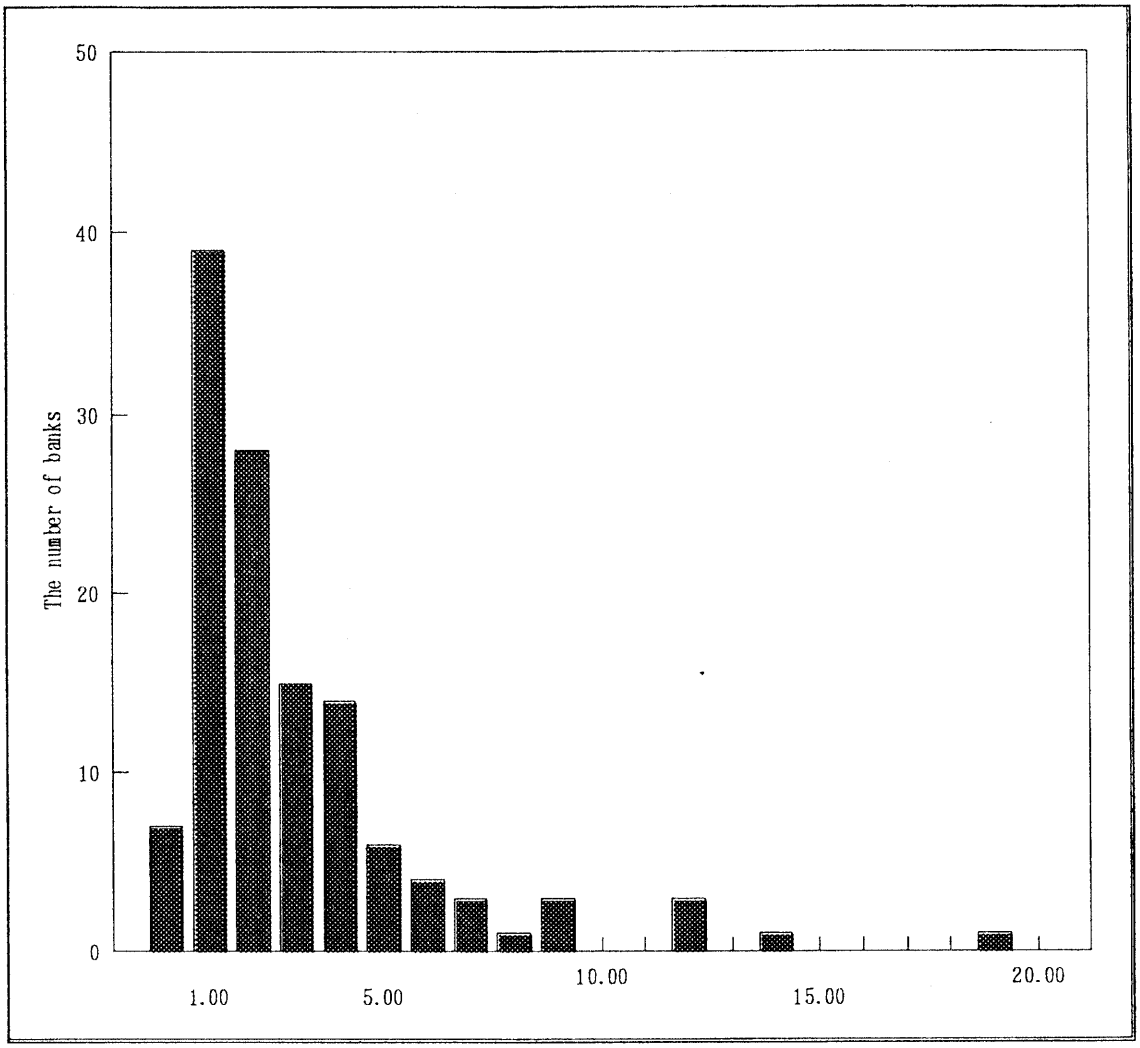
Figure 3: Capital/Deposit Ratio of Japanese Commercial Banks

1960-1985



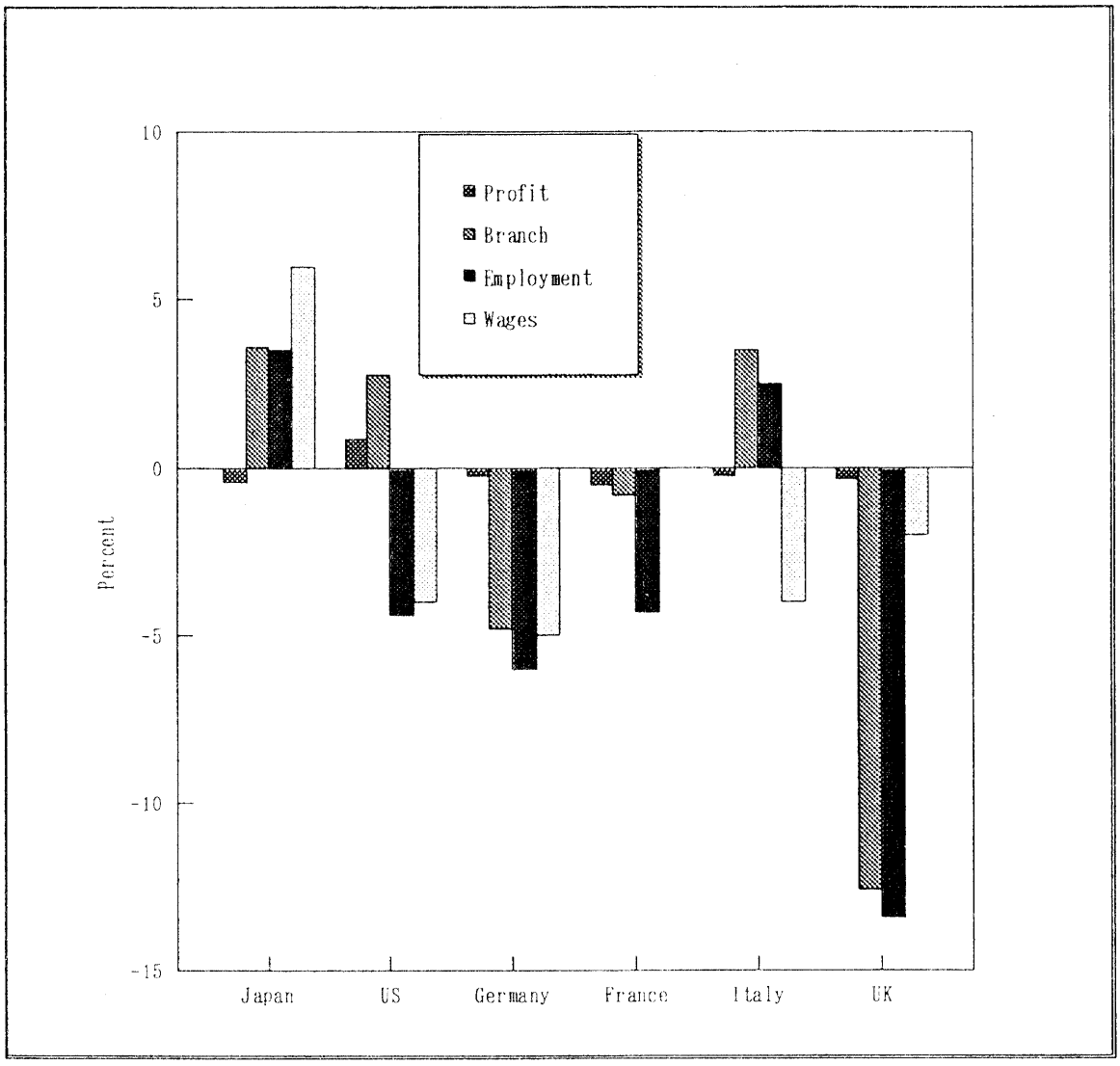
(Source) Federation of Bankers Associations of Japan, Analysis of Financial Statements of All Banks.

Figure 4: The Distribution of Regional Banks
in Terms of Non-performing Loan Ratios



(Source) Federation of Bankers Associations of Japan, Analysis of Financial Statements of All Banks.

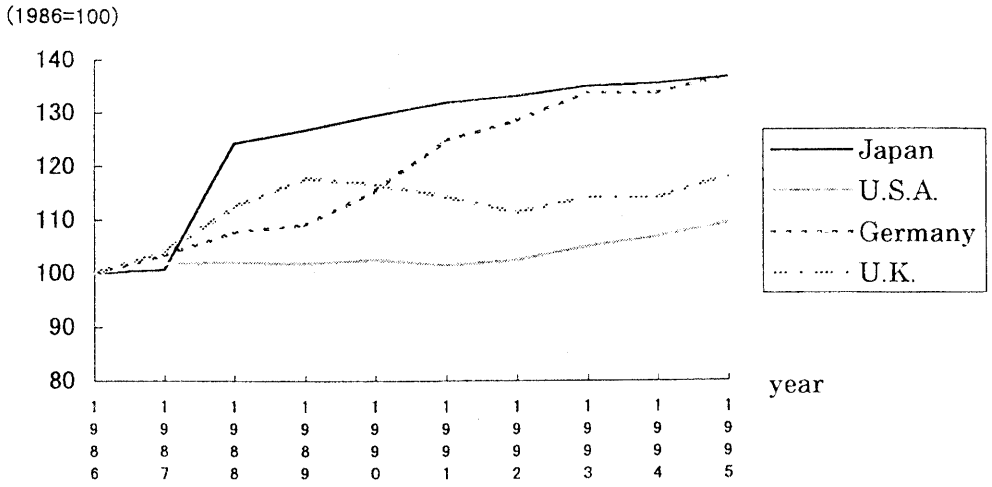
Figure 5: Restructuring in the Banking Industry
International Comparison



(Notes) Profit (total profit per total assets), the difference between the average of 1986-1988 and 1992-1994: No. of branches, the growth rate in the total number of branches from 1990 to 1995: No. of employees, the growth rate in the total number of employees from 1990 to 1994: Wage index (the ratio of wage payment over total revenue), the difference between the average of 1986-1988 and of 1992-1994.

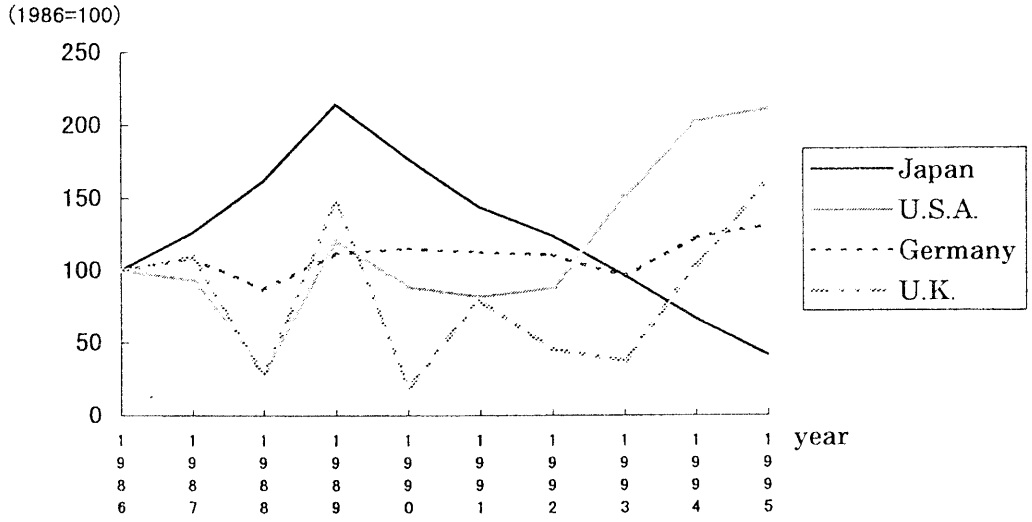
(Source) The BIS 66th Annual Report.

Figure 6 Staff cost of banking sector



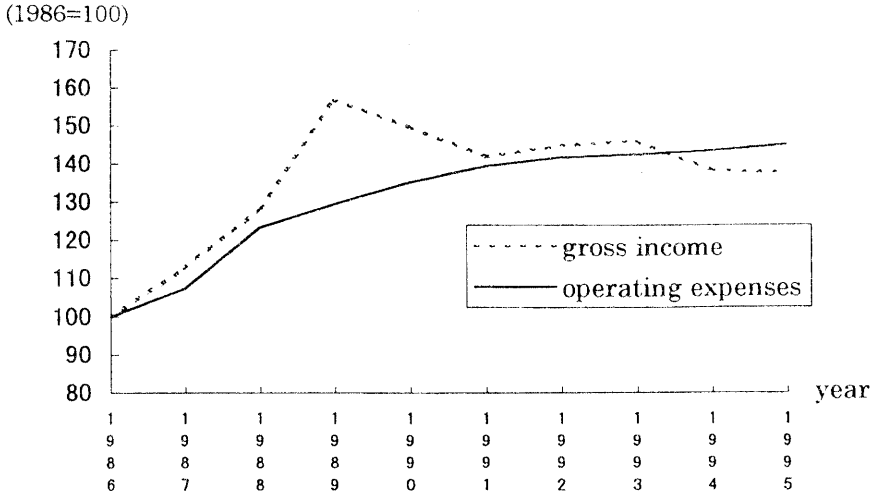
(Source) OECD, *Bank Profitability-Financial Statemants of Banks-.*
IMF, *International Financial Statistics.*

Figure 7 Profit before tax of banking sector



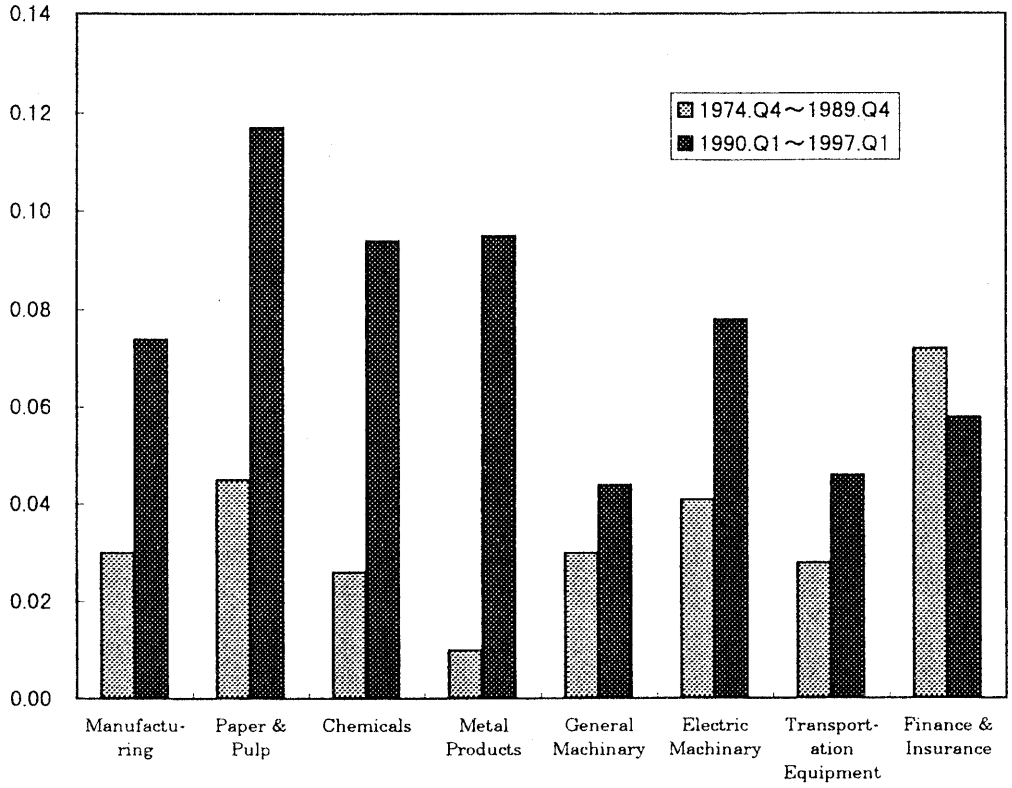
(Source) OECD, *Bank Profitability-Financial Statements of Banks-.*
IMF, *International Financial Statistics.*

Figure 8 Operating expenses and gross income of the Japanese banking sector



(Source) OECD, *Bank Profitability-Financial Statements of Banks-*.
IMF, *International Financial Statistics*.

Figure 9 The adjustment speed of capital stock of industries



(Notes)
Estimated results of Almon lag method.
For sub-sectors within manufacturing, the estimation period ends in 1996.Q1 instead of in 1997.Q1.

Figure10 Japan premium
(from the end of february 1991 to the beginning of July 1998)