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*Towards an Incentive Compatible Financial  
System: Accounting and Managing the  
Non-Performing Loans*

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## Towards an Incentive Compatible Financial System: Accounting and Managing the Non-performing Loans

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**Towards an Incentive Compatible Financial System:  
Accounting and Managing the Non-Performing Loans**

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## **Introduction**

The purpose of this paper is to summarize some features of the on-going NPL problem in Japan, and to point out incentive compatible ways of coping with a problem and investigate the role of accounting system to assess those problems. Rather than going into the institutional details of the issues, we would like to emphasize some theoretic features that are hidden in the layer of difficult issues.

Although many people agree that resolving the non-performing loans problem is of highest priority and urgency for Japan. There still remain, however, misunderstanding and arbitrary hypotheses that may lead to inadequate estimation of the qualitative situation and to wrong appraisal of methods of disposal. Here we plan to give a precise definition of the non-performing loans and define the crucial issues such as the system of disposal, the accounting methods for the disposal of non-performing loans (Section II). We also plan to explain the development process of accounting methods for the disposal of non-performing loans by taking into account the role of the international accounting standards for financial instruments that aims at the implementation of market value measurement (Section III). Finally, we explore the point of tangency between the ongoing NPL problems and the wisdom obtained by the economics of information and contract. Two significant methods of resolving the NPL problem exist. One is assuming the liabilities of delinquent firms and selling them in the market to find the best buyers or managers as taken by the Resolution Trust Corporation (RTC) for the Savings and Loan problem in the United States. The other is injecting capital into firms or more typically banks to insure them against bankruptcy as was taken by the Reconstruction Finance Corporation (RFC) in the United during the Great Depression, and, in a sense, recently attempted in Japan. We compare the economic implications of these two typical methods by exploring the incentive mechanisms embedded in them.

## **II. The Non-Performing Loan Problem: Its Magnitude and the Methods for its Disposal.**

### **2 -1 Three Definitions of the Non-Performing Loans (NPLs) and their Controversial Points**

There are two major definitions for the non-performing loans (NPLs): the risk management loans, and the loans specified and disclosed by banks conforming to the Financial Reconstruction Law. First, the risk management loans were counted as NPLs in accordance with article 21 of the Banking Act. Since March 1998, extending on the previous definition of “publicly disclosed bad loans”, the concept of risk management loans includes loans to bankrupt companies, loans with interest payments in arrears, loans with interest payment more than three months in arrears, and loans with waived or reduced interest payments. As of the end of March 2001, the risk management loans at All Banks (137 banks) amounted to 32.5 trillion yen. Of this total, loans to bankrupt companies, loans with interest payments in arrears, and others were 32.5 trillion yen, 17.8 trillion yen, and 11.4 trillion yen respectively. (See Table 1.) According to the data on the risk management loans by industry, real estates industry, services industry, wholesale and retail industry, and construction industry accounted for 76% of the total amount of risk management loans. Furthermore, it is necessary to mention that the loans for which special loans-loss reserves (Kobetsu Kasidaore Hikiatekin) are set aside are included (not netted out) in the concept of risk management loans and, moreover, the possibility of loan collection through the sales of the collateral is not taken into account.

Second, the loans specified and disclosed under the Financial Reconstruction Law, legislated in October 1998, include the followings: “unrecoverable or valueless” loans to borrowers who have gone into bankruptcy or the virtual state of insolvency, “risk” loans to borrowers classified as “at risk of failure,” and loans needing careful monitoring (Yokanri Saiken) which are equivalent to loans with interest payment more than three month in arrears and loans with waived or reduced interest payment. They are rather close to the risk management loans, especially from the viewpoint of loss loan reserves and collateral treatment. However to be precise, the risk management loans include only loan assets, while the loans specified and disclosed under the Financial Reconstruction Law are

evaluated on the total credits basis (i.e., loan assets plus loaned securities, and other assets). As of the end of March 2001, the loans specified and disclosed under the Financial Reconstruction Law amounted to 33.6 trillion yen. In detail, “unrecoverable or valueless” loans, “risk” loans, and loans needing careful monitoring were 7.7 trillion yen, 15.0 trillion yen, and 10.9 trillion yen respectively.

Besides these two definitions of the non-performing loans, there is also another classification used in the self-assessment of loans that is compulsory for every financial institution according to the Prompt Corrective Action (i.e., stricter government monitoring of banking operations) introduced in April 1998. The Financial Examination Manual prepared by Financial Services Agency classifies of the borrowers into five categories: (1) the already-bankrupt companies (Hatansaki), (2) companies in virtual state of insolvency (Jissitsu Hatansaki), (3) companies at the risk of failure (Hatan Kenensaki), (4) companies still operating but in need of monitoring (Yochuisaki), (5) healthy companies (Seijosaki).

Also depending on the existence of the collateral, it also classifies loans into four categories: Category IV loans (loans considered unrecoverable), Category III loans (loans for which recovery is extremely doubtful), Category II loans (loans not yet non-performing but with questionable prospects for recovery), and Category I loans (performing loans). As a rule, the loans to already-bankrupt companies and companies in virtual state of insolvency are considered as Category VI loans, the loans to companies that are likely to go bankrupt are included in Category III loans. Nevertheless, the bad loans covered by special loan-loss reserves or guarantee is included in the non-classified category (Category I), even in the case of loans to the already bankrupt companies. The loans to companies which are still operating but in need of monitoring (Yochuisaki) correspond to Category II loans, except for those covered by respectable collateral, which are considered as the non-classified category. As of the end of March 2001, the aggregated amount of banks' loans classified within the self-assessment framework was published by Financial Services Agency (FSA). According to FSA, the total amount of the classified loans was 65.7 trillion yen; Category 2 loans were 63.1 trillion yen and category III & IV loans were 2.6 trillion yen. Furthermore, the total amount of loans to already bankrupt companies, companies in virtual state of insolvency, companies that are likely to go bankrupt, and companies still operating but in need of monitoring, including loans covered by special loan-loss reserves or guarantee, amounted to 110 trillion yen. It was 20.7 per cent of the total loans outstanding (including performing loans) of 536 trillion yen.

If we compare the above-discussed definitions of the non-performing loans with each other, we find that the risk management loans and the NPLs specified under the Financial Reconstruction Law seem to be problematic. In those definitions the loans to companies only formally fulfilling contractual terms of agreement by the help of additional support from financial institutions are not included. Recent examples are the loans to general contractors, real estate companies, and large retail companies. Since those loans are extremely close to the concept of the loans needing careful monitoring (Yokanri Saiken), exclusion of loans to those companies tends to underestimate the true magnitude of non-performing loans problem. Meanwhile, we have to notice again the fact that a part of the bad loans for which the loan-loss reserves were set aside is included in the concept of the risk management loans and the NPLs specified and disclosed by banks under the Financial Reconstruction Law, and that the possibility of loan collection through the sales of the collateral is not taken into account.

On the other hand, with respect to the classification of the loans by banks' self-assessment, it would overstate of the NPLs problem for us to consider all of the Category II loans as non-performing because this category of loans includes not only the loans to companies with the potential for default and thus needing monitoring but also the loans to companies with simply unfavorable business conditions, for example, companies operating in deficit that are common in Japan. However, the treatment of loans insured by a respectable collateral even in already-bankrupt companies or with high risk of default as non-classified category involves the danger of overestimating the collateral and thus underestimating the total amount of category III and category IV loans. (Loans covered by other collaterals are classified as Category II loans and partly as Category III loans.)

## 2-2 Methods of Disposal of Non-performing Loans and the Actual Situation of Disposal

The methods of disposal of NPLs can be classified into the indirect write-off of the NPLs through the loan-loss reserves and the final disposal that includes direct write-off through a legal process and selling of the NPLs.

First of all, the indirect write-off of NPLs means the writing off of loans by using loan-loss reserves that can be divided into the following two groups: (a) the special loan-loss reserves set aside separately in each company classified as already-bankrupt companies, companies in virtual states of insolvency and

companies that are likely to go bankrupt, and (b) the general loan-loss reserves set aside for performing companies and companies still operating but in need of monitoring (Yochuisaki). As of the end of September 2000, the total amount of loans to already bankrupt companies, companies in virtual state of insolvency, and companies likely to go bankrupt by All Banks in Japan was 29.3 trillion yen. Among this amount of bad loans, those covered by respectable collateral, which were classified as Category I, were 2.8 trillion yen, and those covered by general collateral, which were classified as Category II, were 10.5 trillion yen. Against the remaining 10.6 trillion yen, 7.9 trillion worth special loan-loss reserves were set aside and the part of loans covered by special loan-loss reserves was classified as Category I. The remaining part of 2.7 trillion yen was classified as Categories III & IV. The general loan-loss reserves held by All Banks amounted to 3.8 trillion yen in the same period.

As for the final disposal, a direct write-off means a complete removal of non-performing loans from the balance sheet of financial institutions through a legal process of liquidation based on the Corporate Rehabilitation Law (Kaisha Kosei Ho) or the Civil Rehabilitation Law (Minji Saisei Ho). There are two methods of the disposal of the collateral: discretionary sale and auction. Discretionary sale is a sale of collateral by a debtor to the third party in order to use the receipt to repay the loan. The merits of this method are its comparatively low cost and speed. But in practice the implementation of this method is sometimes difficult because all the parts involved cannot reach consensus on the matter of collateral. On the other hand, auction is a method when a creditor appeals to the court and receives the dividends on the collateral sold at auction. Compared with discretionary sales, auctions have drawbacks such as low sales prices and complicated and time-consuming sales procedures. The financial institutions can also renounce loans considered irrecoverable and remove them from their balance sheet. Besides these methods, it is also possible to sell non-performing loans in bulk to investors, particularly foreign investors. The bulk sale of the NPLs has some drawbacks such as low prices, but since 1997 final disposal of NPLs seem to have increased significantly due to an expansion in bulk sales of loans to foreign investors mainly by city banks as one of the effective methods of bad loans disposal. It should be also mentioned that the Law on Special-Purpose Companies (SPC) (September 1998) and the Law permitting outside companies to accept payments, collect on defaults, and administer loans on behalf of lenders (February, 1999) were prepared in order to accelerate liquidation of the NPLs.



According to the report in the August 2000 issue of the Bank of Japan Monthly Bulletin, the total disposal of NPLs by All Banks in Japan between fiscal year 1992 and fiscal year 1999 reached 61 trillion yen. (Net transfers of 1.5 trillion yen from the general loan-loss reserves were excluded.) These massive cumulative losses far exceeded banks net profit from core business operations of 41.9 trillion yen during this period. The shortfall was generally financed by net bond sales, net stock-related sales, gains from sales of premises and movable property, and a decrease in capital accounts of 17.7 trillion yen. According to a tentative estimation of the Bank of Japan, 19 trillion yen worth, of the total amount of write-offs, had not yet been removed from balance sheets and remained in the form of special loan-loss reserves or other loan-loss reserves. Therefore, the loan write-offs in the form of the final disposal (which includes losses on sales of such loans and losses arising from financial support to troubled affiliates or business partners) are estimated to be 42 trillion yen. The total principal of non-performing loans corresponding to the above 42 trillion yen disposal is estimated to be approximately 52 trillion yen. Thus, loans recovery is about 10 trillion yen. Despite huge write-offs, Japanese banks are still burdened with large amount of loans to already-bankrupt companies, to companies in virtual state of insolvency and companies which are likely to go bankrupt. This steady increase is primarily due to dismal business performance of the borrowers.

### **III. Accounting Methods for Disposal of Non-Performing Loans Based on the International Accounting Standards (IAS).**

#### **3-1 New International Accounting Standards Committee and Japanese Financial Accounting Standards Foundation**

International Accounting Standards Committee (IASC) is an independent privately funded accounting standard setter established by certified accountants from nine countries such as United States, England, Canada and others in 1973. The main mission of the Committee is development of international accounting and disclosure standards. Originally countries were free to adopt International

Accounting Standards (IAS) developed by IASC. Nevertheless, gradually they became to be accepted as global accounting standards especially after 1995 when International Organization of Securities Commission consisting of financial supervisory agencies recommended using ISA in financial statements of the companies involved in cross-border financial procurement.

The new IASC is committed to developing, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require transparent and comparable information in general purpose financial statements. In addition, the new IASC cooperates with national accounting standard setters to achieve convergence in accounting standards around the world.

In Japan the economic and financial crisis showed the need for reliable and transparent accounting developed by private accounting setter remaining independent from the government which has until now had a decisive influence on the formulation of accounting standards. Based on these considerations in August 2001 Business Accounting Deliberation Council, an advisory council of the minister of finance (after establishment of Financial Services Agency, an advisory council of minister in charge of financial services), was replaced by Financial Accounting Standards Foundation, a private sector organization including Accounting Standards Board.

### 3-2 International Accounting Standards and Japanese Accounting Standards (JAS)

Great Britain and Canada have been actively endorsing IAS from the very beginning of the IASC establishment. Furthermore, important developments are taking place in the European Union and the U.S.A. and it would not be an exaggeration to say that in the future IAS will become global accounting standards for all the companies procuring funds on the international financial markets.

As a part of Japan's Big Bang financial markets liberalization kicked off in November 1996. In the accordance with it, the government has been putting forward the re-examination of accounting standards. However, the transparency of the Japanese accounting standards still remains to be concern among other countries. Advances in financial risk management and information technology, globalization of capital markets and accelerated use of sophisticated derivatives and other complex financial instruments are now combined to be a motivation to change fundamentally the business and investment environment. It has become apparent that traditional accounting methods need to be overhauled.

Harmonization of the national and international accounting standards is indispensable to boost the competitiveness of not only Japan's companies that are involved in cross-border fund procurement but also of Japan's capital markets on the whole. Use of the double standards, i.e. requirement to prepare financial statements in accordance with IAS in case of international fund procurement and in accordance with national standards in case of domestic procurement, must be inefficient because of additional expenses involved that may entail a hollowing-out of Japan's capital markets.

In 1998 IASC start working on the project on accounting methods for financial instruments. IASC published exposure drafts of proposed standards E 40 and E 48 in 1991 and 1994 respectively. These drafts proposed far-reaching changes to accounting for financial instruments and similar items. IAS 32, Financial Instruments, Disclosure and Presentation, based on the draft E48 was approved in May 1995. IAS 39, Financial Instruments, Recognition and Measurement, was finally approved after long discussions in October 2000.

In March 1997, IASC published a discussion paper on Accounting for financial assets and liabilities. This paper represented the next stage of development of accounting for financial instruments. In December 2000, the Financial Instruments Joint Working Group of standard setters (JWG) accepted the Discussion paper. It concluded that market value is the most relevant measurement attributed for all the financial instruments. Also it proposed that changes in market value of financial assets and liabilities reflecting the effects of changes in certain economic conditions are to be recognized in the income statement in the reporting periods. It appears that IAS for financial instruments will be completely developed on the basis of the market value measurement principle.

In the Japanese practice, it has been allowed to evaluate assets at the cost basis and occasionally either by the lower value of the cost or the market value. In contrast to the market value accounting, under historical cost accounting conducted in Japan, bonds, stock shares and other financial instrument were calculated at the cost basis (or partly either the lower value of the cost or the market value) and changes in values, i.e. unrealized holding gains and losses, were not recognized until they were realized. Since March 1998, however, banks, securities companies and others began to evaluate their contracts, which involve trading accounts securities, certificates of deposit, and derivatives, based on the market value principle. Thus they attempt to recognize all the gains and losses in

the profit and loss statement in the reporting periods. Furthermore, in January 1999, the Business Accounting Deliberation Council published new accounting standards for financial instruments. It required the evaluation of the securities on the basis of market value beginning from March 2001. With regard to securities the above mentioned council divide them into the following four categories and accordingly determine their accounting treatment: (1) investment securities held for trading, (2) bonds held to maturity, (3) equity interests in subsidiaries or affiliated firms, (4) other investment securities (cross-shareholdings). The market value accounting has been accepted for (1). On the other hand, (2) and (3) are to be conducted as before based on the historical cost accounting. As for (4), beginning from March 2002 (and possibly ahead of the schedule) unrealized profits and losses should be calculated at market price at the end of every reporting period and be recorded in the capital account (as a rule, they are not contained in the income statement) taking into consideration the tax-effect accounting. Moreover, in the case of historical cost accounting of cross-shareholdings and other securities, the charge-off into the loss statement is compulsory if losses exceed 50% of the book value and the charge-off is recommended if losses exceed 30%.

### 3-3 Accounting Methods for the Disposal of Non-Performing Loans

In the current international accounting standards, finance receivables (loan assets) are defined as the financial assets held with the intention of long-term investment or held to maturity. They are usually evaluated at the amortized cost, that is, determined by using the effective interest rate that exactly discounts a stream of future cash payments through maturity. When, based on current information and events, it is probable that a creditor will be unable to collect all amounts due according to the contractual terms of loan agreement, a creditor may write down the loan measured as amount of expected future cash flows discounted at the loan's effective interest rate. According to the Statement of Financial Accounting Standards (FAS) 114 "Accounting by creditors for impairment of a loan" issued by Federal Accounting Standards Board (USA) a creditor should measure impairment based on the present value of expected future cash flows discounted at the loans effective interest rate. Conceptually it is the same as IAS.

On the contrary, in the Japanese accounting practice, finance receivables (loan assets) are evaluated as the principal by taking into account the normal appraisal of default risk. And non-performing loans are usually disposed through loan-loss

provisioning such as special loan-loss reserves and not through the depletion. In January 1999, Financial Reconstruction Commission published "The Viewpoint on the Write-offs and Allowances in Association with the Capital Injection." It required the Japanese banks to make the rigorous assessment of asset quality along with the provision of reserves for NPLs at the following ratios: (1) About 70% was recommended on loans (uncovered by collateral or guarantee) to companies at the risk of failure, (2) About 15% was recommended on Yokanri Saiken (uncovered by collateral or guarantee) to companies classified in need of careful monitoring, (3) Appropriate provision ratios based on the historical loss records are recommended on other loans to companies in need of careful monitoring (Yochauiski). This standard has been in force since March 2001. Furthermore, the provision ratio on the loans (uncovered by collateral or guarantee) to already-bankrupt companies and companies in virtual state of insolvency has been 100%.

The acceptance of market value accounting standards for all financial instruments by new IASC would require finance receivables to be measured at the market value or, in a sense, the fair value, i.e. future cash flows discounted by market interest rate plus risk premium. Under the market value accounting, the measurement of loan assets on balance sheet of banks will most likely be susceptible to fluctuations in interest rates and default risk of the borrower in question. Besides, the loan rollover and reduction or waiving of the interest payments will immediately affect the fair value of loan assets through the changes in future cash flows.

Nevertheless, the classification of the loans including NPLs continues to require close attention of both financial institutions and Financial Services Agency, because under the ongoing system the amount of NPLs and thus the size of loan-loss reserves entirely depend on the criteria chosen for loan assessment. It allows the bank managers to be loose in calculating the size of their NPLs. By the intentional underestimation banks are trying to conceal the burden of net transfers to make up for possible loan losses. The introduction of market value accounting is expected to force banks to make their management styles more responsive to the market because reduction in the interest payments, rollover of the loan, dismal business performance of the borrower increasing risk of default will immediately reduce the market value of the loans. However, in order to create international and domestic confidence in the market value accounting and to facilitate disposal of NPLs, it is crucial to enhance infrastructure of the secondary markets with depth by the use of such methods as securitization and establishment of credit rating

system.

## **. Incentive Issues for Accounting and Managing Non-Performing Loans (NPLs)**

### **4-1. The Principle of “Let Bygones be Bygones.”**

In this section, we will discuss the incentive problems lying behind the figures we explained. Let us start from the accounting problem.

In the finale of the first act of “Die Fledermaus”, by Johann Strauss, a charming tune sings, “Happy are those who can forget what they will be no longer able to change.” This corresponds to the phrase, “Let bygones be bygones,” and it is as well one of the basic principles to characterize the efficient process for handling non-performing debt. In order for the business to carry along, it should not be backward-looking about the failure made in the past but be always forward-looking.

Therefore, stock or bonds that used to be highly valued do not have any meaning to the current business if they have lost their value. Namely, the market indicates its forecast about a company’s future earnings by the low values of its stock. As Kyoji Fukao once said, it is no use counting gambling tickets for the horse race you lost. This principle is, for one thing, the basis for the market value accounting so far discussed. Incidentally, during the time when production process was more important for the company, and the process was more or less regularly, the evaluation in terms of stocks or bonds at purchase cost might have been meaningful because that sort of procedure highlights activities in flow dimensions. Now that we are living in highly securitized society where the stock value of assets is important, it is essential to evaluate the value of the company by a forward-looking process. Therefore the reason for adopting the IAS (International Accounting Standards) is not just for conforming to the international practice but for following the rationality principle of “Let bygones be bygones.”

The current problem in the Japanese economy is, in our opinion substantially rooted in the aggregate demand policy that sustained the stock and land price boom and contracted, so suddenly that it over-killed the boom. Those policy

environments induced many mistakes by business and financial agents. However, we can no longer change the consequence of the past failures and the task left to us is to do the best with the present situation given the past failures. The economic rationale for modern treatment of accounting such as the decomposition of earning-loss statements among sectors and projects is obvious if we demand the transparency in accounting information.

Incidentally, the traditional accounting system in Japan seemed to be not so much organized for the purpose of providing transparent information on the economic status of a firm as used for the means of imposing taxes. Accounting mattered for the tax purpose rather than for the assessment of profitability of a business. Many accounting and book-keeping instructors came from *Zeimu Daigakko* (the Tax University) of the National Tax Bureau.

#### 4-2 The Incentive Structure of Redeeming Non-Performing Loans

There are two objectives to be satisfied by a desirable scheme of clearing non-performing loans. The first objective is, given the accumulation of non-performing loans that are the result of the past, to make the most of the present situation. The second is to give economic agents the incentives to minimize the *ex-ante* cost concerning the non-performing loans.

By the way, Oliver Hart (1995) lists “Goals of a bankruptcy procedure” as follows.

1. A good bankruptcy procedure should achieve an ex post efficient outcome (that is, an outcome that maximizes the total value of the proceeds measured in money terms received by the existing claimants).
2. A good bankruptcy procedure should preserve the (*ex ante*) bonding role of debt by penalizing managers adequately in bankruptcy states. However, bankruptcy should not be so harsh that managers try to avoid it at any cost, e.g. by ‘gambling’ with the company’s assets.
3. A good bankruptcy procedure should preserve the absolute priority of claims; that is, the most senior creditors should be paid off before anything is given to the next most senior creditors, and so on down the ladder (with ordinary shareholders at the bottom).

The first two goals correspond to our criteria.

In order to fulfill the first objective in the process of clearing and managing NPLs, the principle of “Let bygones be bygones” is most relevant. We should try to

make the best from the present into the future. Here again we have to ask two questions. The first question is whether the firm should continue operating. To answer this, we go back to a first lesson of microeconomics. Any business activity that covers short-term variable average cost is worth operating even if it cannot cover the long run average cost. Thus, the first principle of the debt management is to continue the activities that have more revenue than the short-run variable average cost. The loss from the past is a sunk cost and should not be considered in deciding whether or not to continue the current activity. Even if you lost a lump-sum amount of money because of mistakes or misfortune in the past, the operation will be worth continuing as long as the short-run average cost is covered. If revenues from operating the activity would be smaller than the short run average cost, then the project should be scrapped. If a bank continues to lend to the activities that cannot cover the short-term average cost, then the operation is exactly what is called *oigashi*, the rollover of the lending. (Sakuragawa et al.) *Oigashi* is similar to the Ponzi scheme in the sense the activity attracts lending despite of its lack of productivity, but unlike the case of the Ponzi game the *oigashi* process continues because the lender as well as the borrower is motivated to continue it.

As the principle of “Let by-gones be by-gones” indicates, new lending decision should be made independently of the failure in the past. Therefore, the market value principle helps the process very much. By the same token, writing-off the past NPLs would make business calculation transparent without the trace of past failures. Firms can make decisions more easily for the future because the fall-out from past failures does not obscure the profitability of new projects, and the whole process becomes much more transparent to stock holders, lender and other interested parties. *Oigashi* becomes more difficult.

Of course, in order to fulfill the *ex-ante* efficiency, the past failure cannot be neglected altogether. We have to build a sanction system against those who made wrong business decisions in the past. We can no longer correct the past behavior again, but we have to give sanctions to those who made mistakes. In order not to be repeated, the past failure should be corrected.

The firm should follow the formal bankruptcy process, when reorganization cannot make the firm cover the short-run variable cost. It should rehabilitate by some process, e.g. *minji saisei* (civil rehabilitation process), when a restructuring process make the project cover the cost.

Then the next question is, when the activity is to be continued, who should be



in charge. Hart, Aghion and Moore (1992) and Hart (1995), for example, developed a pure theory of bankruptcy from the basic principle of microeconomics. According to them, the market should be called for determining who should be in charge. The desirable principle is that those who can make the best profit out of a business should be given the right to manage it.

This principle is to choose the operation of the firm from the perspectives on earnings into the future. How can we find who regards herself or himself as she or he can obtain the maximum profit out of the operation of the problematic firm? A bidding process will find such agents. If somebody bid the highest price for non-performing loans or stocks of the firm in troubles, then she or he should be in charge. Thus the highest bidder will be given the right to operate the firm. This principle corresponds directly to the actual institutional scheme to the RTC (Resolution Trust Corporation) and indirectly to that of the RFC (Reconstruction Finance Corporation).

Incidentally, there is another institutional device, called "*Seirikaishu Kiko*" (Resolution and Collection Corporation, RCC) in Japan. The Housing Loans Administration Corporation and The Resolution and Collection Bank merged into the RCC in April 1999. In purpose, the RCC is aimed to emulate the RTC. At present, however, collection is regarded as the strongest point of its activities. It should and hopefully become like the RTC in some time.

The RTC in the United States was created in 1989 to manage the NPL generated by the Savings and Loans crisis that had continued then for the two decades. In the S&L crisis about 3,000 Savings and Loan Associations bankrupted. Their loans were handled by the RTC that was built by the FDIC (Federal Deposit Insurance Corporation). The RTC bought the delinquent loans amounting to \$900 billion. Using such a variety of techniques, as bridge bank, open banking acquisition (OBA), and assumption of debt, it transformed those bad debts into liquid, marketable ones. Taxpayers paid about \$125 billion as the financial burden for these bad debts but they resold all those debts by the time when the RTC was closed in 1995. The RTC synthesized, assembled, sliced, decomposed and sold the liabilities of S&Ls that were acquired and collected. The RTC engaged even in the real estate business related to the S & Ls they handled. The liabilities they transformed went, as Aghion et al. argued, into the hand of the supposedly or approximately the highest-earnings entrepreneurs.

Incidentally, this principle of choosing the economic agent who manages the firm, or the principle of assigning the ownership of the firm by the RTC practiced,

is closely related to the principle of the “cheapest cost avoider” in law and economics. For example, if a person was injured by a car, who should be responsible for the damage. Or if a person is infected by HIV virus through the use of non-sterilized blood products as happened in Japan, who among the related parties is to blame, namely, who among importers of the blood products, pharmaceutical companies that sold the product, doctors, nurses or the patient himself is to bear the cost? There are all kinds of possibilities. According to the principle of the “cheapest cost avoider”, a driver should be responsible for the injury when he or she is most likely the one who can avoid the accident. This assignment is changed in case a pedestrian has committed a serious neglect of care (contributory negligence). In the HIV case, it seems that pharmaceutical companies could have avoided the accident most easily. Thus the principle of the “cheapest cost avoider” is the principle to assign the liability on whoever could have avoided the cost most cheaply or with the least sacrifice. It is hard to be responsible for something you cannot influence. If somebody can easily avoid the cost by his or her action then it is most economical for the society to impose liability on him or her. This principle can be applied to the handling of non-performing debt. Whoever can effectively change the course of business should bear the risk as well as the benefit.

In Japan, one can make use of this principle to handle the NPL problem most effectively. As Yuri Okina (1998) wrote, the essence of debt clearance is not to just write off the accumulated debt but to improve the cash flow by regaining efficiency of the firm through better monitoring of the activities and finding the best manager through securitization. Because the basic source of the bad debt problem is malfunctioning of business, just clearing the NPLs in the accounting sense does not solve the problem.

The RTC method can be seen as a straightforward application of the Aghion et al. type of recommendation. The present practice of the RCC is still emphasizing collection, but it is hoped that it will assume the role of the RTC soon.

There are hurdles to be cleared before the RTC should work. First, the economy must have a fairly developed security and bond markets. Second, human resource and legal institutional arrangement should be ready in order to handle the process for transforming NPLs into junk bonds and securities. Third, in Japan the market for NPLs is still just emerging. Therefore, the evaluation of fair values for those loans and securities for sale may need some adjustment period. Finally, there is a difficulty that one cannot directly use this RTC method for a

large bank that occupies a significant mass in the financial market. In theory, of course, we can construct an institution that buys the non-performing loans of the bank and then reorganizes them into bundles and pieces for the resale to the public, playing the role of the RTC. However, a failure of a substantially large bank may create systemic disasters to risk the survival of the financial system. Therefore, we should pour into the system some additional funds to avoid the bankruptcy of a major bank. This call for the injection of capital to precarious banks, the method taken by the Reconstruction Finance Corporation (RFC) in the U. S. in the 1930's. The problem here is that injection of capital is not only expensive but also subject to various moral hazard possibilities.

A typical device to avoid the moral hazard is to require the bank under the plan to issue preferred stocks, or subordinated bonds, to the state that pours capital into the ailing bank. By this device, a substantial restraint is imposed on the incumbent manager that he may lose the control if he cannot improve the management. This is a positive feedback but still a weak one. In order to strengthen the discipline, capital is to be injected after reduction of capital as a means of redemption of non-performing debts, and one needs the change in managers who was responsible for the increase in delinquent loans.

Major re-capitalization of banks in Japan by Kinyu-Kiki-Kanri-Shinsa (Sazanami Commission) was inefficient because of its incredibly incentive-incompatible way in designating the banks to which the injection applied. The second major re-capitalization by Kinyu-Saisei-Iinkai (Financial Reconstruction Commission) led by H. Yanagisawa had a substantial impact. However, it was not without incentive problems because neither reduction of capital nor changes in management was made.

Let us start from the *ex-post* benefit and cost of this scheme. As already discussed, this method of injection can be most effectively used when the RTC method is inapplicable because bankruptcies of the banks under consideration would mean a loss of critical public goods. Since the injection of capital can solve this public good problem, the benefit side of this scheme is obvious. Usually, the injection of capital can prevent the crisis with some probability. Then the expected benefit of the injection of money for re-capitalization will be the expected value of the benefit of avoiding the crisis.

Let us turn to the cost side. If the institution pours capital into banks that are solvent, then the money is useless but not wasted. As long as the secure bank does not want to be nationalized by the injector of capital, they will return the

money to buy back the preferred stocks. In this case, except for some room for the moral hazard that the money is used inefficiently because of the soft budget, the injection of capital does not leave room for substantial waste. If the bank under re-capitalization goes bankrupt, on the other hand, the money injected to the bank is lost and wasted. This amount of money becomes a transfer to the bank and its clients. It does not help improving the public goods of sound banking atmosphere. ( An exception is when the “pay-offs” to the deposits are made by this transfer. In that case, the transfer creates some public goods effect. )

Most of banks lie in between. The RFC equivalent or even banks themselves do not know exactly whether or not they fail with capitalization or without capitalization. Moreover, asymmetry in information exists between the RFC equivalent and banks, which probably know somewhat better about their own business conditions. The banks that are near the boundary between solvency and insolvency will have tendency to understate the seriousness of their situation because the injection will give some room to manage cash. The government that lies behind the RFC equivalent has to guard itself against excessive injections of funds, while it is hedging against increasing the probability of failures.

What happened in Japan was more curious. Banks did not apply for sufficient capital injection, even if they were offered, because they feared that they might lose reputation for sound banking if they sent the signal for accepting the injection. In the first episode of injection, the government, injector rather than receivers begged major banks to accept capital injection. (cf. Corbett and Mitchell)

We have to take account, in addition, of the *ex-ante* incentive problem. If agents know that the government will help by injection of money, banks may be too aggressive in extending loans, and depositors may be too optimistic about the safety of the banks. Here, as always, the conflict between the *ex-ante* decision and the *ex-post* decision appears. To make the financial behavior more efficient with disciplines, the government should refrain from using a scheme like the RFC. On the other hand, to avoid a possible financial crisis, it should rely on some scheme like the RFC.

Incidentally, another factor worth noting is the difference in the pay-off schedule for contingent claims between creditors, bondholders, lenders and stockholders. Equity holders have the return schedule contingent on firm's profit as in figure 1A. On the other hand, bond holders or loan holders will get constant interest payments as long as the firm earns enough profit to pay all the interest liabilities. Neither the stockholders nor the bondholders are responsible for

something more than they invested. (Figure 1B) The profiles of return, however, are quite different. The holder of assets is motivated to manage the firm well when she or he faces an upward-sloping return schedule. Equity holders are thus motivated well for managing a firm under the normal range of profit conditions. Bondholders are keenly interested in returns of the firm when the return comes into a lower range and when the possibility of bankruptcy comes into sight. Then under normal situations, equity holders are considered to manage the firm well, while bondholders have more concern with the lower range of returns. If they feel concerned about the security of the interest and principal payments, they would like to intervene in the business operation. Then they become more or less like equity holders. Dewatripont and Tirole (1994) discuss this type of problem.

There is another school of thought about monitoring effect of debt rather than equities. If owners of the firm, stock holders, are different from managers of the firm, then the managers may find it tempting to shirk doing the job. Shareholders' meeting may not be effective to oblige executives to work for maximizing the profit instead of pursuing their own perks. Debtors should be repaid if managers have to be in charge.

According to the principle of equitable subordination in the Anglo-Saxon law, creditors who intervene in business activities lose priority in collecting the debt and interest payment. Accordingly, their claims are subordinated and they become subordinated debt holders. The profile of equity holders and debtors in the charts show their typical cases. Between the schedules of debtors and pure equity holders, there are schedules for the subordinated debtors and for the preferred stock holders. (See J.Mark Ramseyer, Chap.7 in Aoki and Patrick eds.,1994) There remains why the main bank is motivated to play the role of controlling the firm, as well as the role of incurring loss for the firm. The main bank system is an interesting way of co-insurance among banks. It was effective when the Japanese economy was growing. Banks could save monitoring cost by delegating it to the main bank. Banks took turn for becoming a main bank. Now under this turmoil, however, the incentive for defecting from this repeated game situation increased. In other words, the threat of sanction against breaking the norm for the main bank became less serious than before because the present situation is hard for the bank.

Incidentally, even though the principle of equitable subordination does not apply in the Japanese Law, the main bank intervenes and often bears the burden for reconstruction of the firm. This may indicate that the *de facto*, if not *de jure*,

subordination is partly practiced in the main bank system.

The difficult problem is to tell who can manage the firm most effectively, when the firm faces adversities. In the RTC scheme, the market principle tells that the best bidder will be the most capable one. By this principle, the firm is generally managed in accordance with the principle of the best management of the firm. This is the best scheme from the incentive standpoint. The only issue is if the RCC in Japan has sufficient accumulation of know-how to do this.

If the RTC method cannot be adopted because of the fear of a systemic crisis, then some measures like the RFC methods have to be introduced. As we have seen, then the scheme has a variety of moral hazard possibility. Here also, under the RFC scheme, the government must provide know-hows and entrepreneurship for the reconstruction of the nationalized bank. The financial services Agency (FSA) hardly seems to possess ample human resources for rehabilitating ailing banks. The government is now subject to a difficult choice of the trade-off between the systemic stability of the financial system and the effective working of the incentive mechanism.

### *Concluding Remarks*

We first presented the magnitude of the non-performing debt in Japan and the changing accounting principles that accompany it. Then, we discussed the economic logic behind the accounting changes and the incentive structures to be brought about by the RTC or the RFC type of the scheme. As long as the danger of systemic risks in the financial system is not altogether neglected, the choice for an incentive compatible method for redeeming non-performing debts will be a difficult one.

It remains to be seen whether this difficult task is done by the utilizing market-oriented, western style management, or by collaborative methodology developed in Japan or some part of Asia. Still, even though some Asian legacy remains in this part of the world, the incentive compatibility must be the essential ingredient for the system. In other words, participants in the system are to be motivated properly for the efficient working of the system.

## REFERENCES

Aghion, P., Hart, O. D. and Moore, J., 1992, *The Economics of Bankruptcy Reform* (Cambridge, Mass.: MIT)

Aoki, M. and Patrick, H. eds., 1994, *The Japanese Main Bank System* (Oxford University Press)

Corbett, J. and Mitchell J., 2000, "Banking Crises and Bank Rescues: The effect of Reputation", *Journal of Money, Credit, and Banking*, Vol.32

Dewatripont, M. and Tirole, J., 1994, *The prudential Regulation of Banks* (The MIT Press)

Hart, O., 1995, *Firms Contracts and Financial Structure* (Clarendon Press Oxford)

Okina, Y., 1998, *Joho-Kaiji to Nihon no Kinyu-System* (Toyo Keizai Shinposya)

The Bank of Japan, Bank Examination and Surveillance Department, *Settlements of accounts for all the banks in Japan in the fiscal year 1999*, monthly research reports in August 2000

The Bank of Japan, Bank Examination and Surveillance Department, *Settlements of accounts for all the banks in Japan in the fiscal year 2000*, monthly research reports in August 2001

**Table 1: The movements of Non-Performing Loans' stock holding by Banks in Japan**

(¥ 1,000 billion )

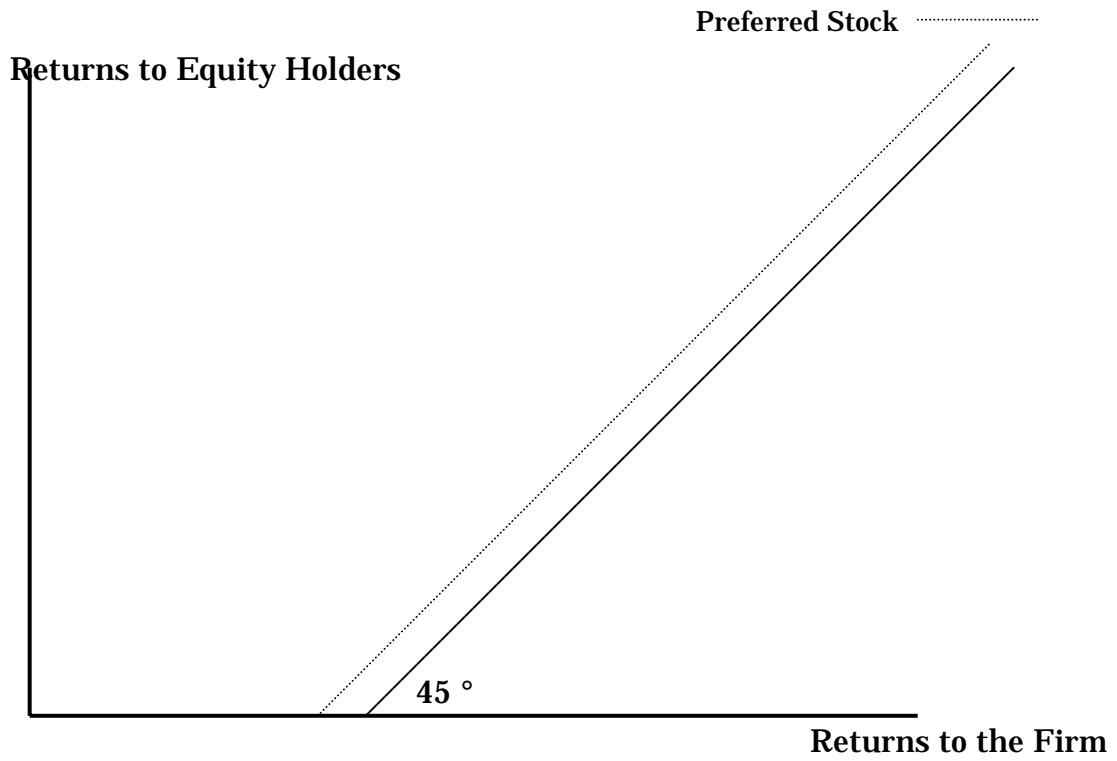
	In the end of March 1998	In the end of March 1999	In the end of March 2000	In the end of March 2001
The loans under risk management	<b>29.8</b> <b>(22.0)</b>	<b>29.6</b> <b>(20.3)</b>	<b>30.4</b> <b>(19.8)</b>	<b>32.5</b> <b>(19.3)</b>
The loans specified and disclosed conforming to the Financial Rehabilitation Law	- (-)	<b>33.9</b> <b>(21.9)</b>	<b>31.8</b> <b>(20.4)</b>	<b>33.6</b> <b>(20.0)</b>
Self-assessment of loans that is compulsory for every financial institution	<b>71.7</b> <b>(50.1)</b>	<b>64.3</b> <b>(41.6)</b>	<b>63.4</b> <b>(40.9)</b>	<b>65.7</b> <b>(42.2)</b>

The number in a parenthesis indicates the total amounts of NPLs' stock of city banks, long-term credit banks and trust banks.

(Source) The Bank of Japan



**FIGURE 1A**



**FIGURE 1B**

