FILP: How Much Has Been Lost? How Much More Will Be Lost?

Takero Doi
Department of Economics
Keio University

and

Takeo Hoshi
Graduate School of International Relations and Pacific Studies
University of California, San Diego

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ABSTRACT

This paper examines the financial health of the Fiscal Investment and Loan Program as of the end of March 2001. We study the financial conditions of the FILP recipients, which include public corporations and local governments. We find many public corporations and local governments are *de facto* insolvent. Our estimates suggest as much as 68% of the FILP loans are bad. The expected losses are likely be ¥45 trillion (9% of GDP) or higher. The paper also studies the effects of the FILP reform of April 2001, which tries to introduce the market discipline in allocation of FILP funds. We do not detect significant changes in the financial flow, yet. The financial market seems to differentiate the newly introduced FILP agency bonds, which are supposed to without government guarantee, from government guaranteed bonds. It is too early to tell, however, whether the financial market will become an effective monitor of FILP agencies.

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1. Introduction

The Fiscal Investment and Loan Program (FILP) in Japan collects funds through government financial institutions (most notably postal savings) and use the funds to finance public projects undertaken by government-affiliated corporations or to finance government loans to borrowers in targeted areas (targeted industries, small firms, mortgage borrowers, etc.). Many countries have government sponsored loan programs. The Japanese program is distinguished in its size. As of the end of fiscal 2000 (March 2001), for example, the outstanding amount of the FILP stood at ¥ 418 trillion (about $3.48 trillion at the exchange rate of ¥ 120 per dollar) or more than 80% of GDP. The postal savings, which is the most important source of funds for the FILP, is the world's largest financial institutions, accepting ¥ 250 trillion of deposits (35% of total household deposits) as of the end of fiscal 2000.

The FILP is sometimes called the "second budget," but the Japanese government stresses a difference: the FILP administers loans, which are supposed to be repaid with interest. For example, *FILP Report 2000* prepared by the Ministry of Finance (MOF) claims:

> if the government did not use interest-bearing funds, relying instead on grant assistance using tax revenues, then in some areas, grant recipients might not exercise the needed self-discipline in undertaking projects and policy goals might not be fully met. (p.4)

It is not obvious, however, the recipients of the FILP, which mostly consist of government financial institutions (such as Development Bank of Japan) and special public corporations (such as Japan Highway Corporations), would exercise such self-discipline, because no government agencies or public corporations were allowed to fail in the past.

The case of the former Japan National Railroads (JNR) shows that such self-discipline in fact did not exist and that losses made by government corporations eventually add to the general liability of the government. The JNR started to run deficits in 1964, but was allowed to continue operation and to add to the debt. When it was privatized in 1987, the debt of ¥ 25.5 trillion and some JNR assets were transferred to newly created JNR Settlement Corporation (JNRSC), which was supposed to pay down the debt using the proceeds from the sales of assets transferred from the JNR in the following 10 years. The assets sales stalled and the amount of liabilities actually increased. When the statute of JNRSC expired in 1997, the government assumed almost all the ¥ 28.3 trillion debt.

The JNR is not the only FILP recipient that accumulated huge losses. The Special Account for National Forest Service, which was used to be one of the FILP recipients, was restructured in fiscal 1998. The government issued bonds to pay for the losses that amounted to ¥ 2.8 trillion. There are also some news that suggest losses are accumulating in the accounts of the existing FILP recipients. For example, the Pension Welfare Service Public Corporation (*Nenpuku*) incurred a single-year loss of ¥ 2.3 trillion in fiscal 2000.[1] The Japan Highway Public Corporation may see its debt continue to grow unless traffic volume increases at an unreasonably

[1] "Government Pension Mgt Entity Posts Record Y2.3tln Losses" *Nikkei Net Interactive*, July 7, 2001.

high rate.[2] As the case of JNR suggests, the losses accumulated in the FILP are likely to be assumed by the government and hence eventually constitute a burden for the taxpayers.

The purpose of this paper is to examine the cost of the FILP for the taxpayers in this sense. The paper examines the financial condition of the individual special public corporations (SPCs henceforth) and the government accounts that are recipients of the FILP. The examination confirms the difficulty of getting a clear picture about the financial health of the FILP using the publicly available information, but we find even the most conservative estimates suggest substantial amount of losses hidden in their balance sheets, which must be paid by the taxpayers sometimes in the future. The paper also describes the FILP reform introduced in April 2001 and evaluates its likely impacts on the future financial health of the FILP.

There are few studies of the FILP written in English. A good description of the FILP and the postal savings system is found in Cargill and Yoshino (2000, 2001). Wallison (2001) discusses the FILP reform of 2001. *FILP Report*, an annual publication available at the web site of the MOF (http://www.mof.go.jp/english), is an official guide the FILP.

There is a huge body of research done by Japanese scholars and documented in Japanese. There is the vast literature on the FILP written in Japanese. Iwamoto (2001a) provides a comprehensive survey of the Japanese literature on the FILP. Most of them examine government financial institutions in the FILP, such as postal savings and Government Housing Loan Corporation. Few studies looked at financial situations of the other FILP agencies.

Matsuura (1990), Kono (1993), and Fukao (1998) are among the few papers that try to provide a comprehensive picture on how the FILP works. They carefully entangle the complex flow of funds and subsidies among the central government, public corporations, and local governments in the FILP.

The papers that are most closely related to ours are Iwata (1998) and Doi, Hatanaka, and Mori (2001). Iwata (1998) finds serious under-capitalization, substantial amount of bad loans, and significant under-reporting of depreciations for selected FILP agencies. Doi, Hatanaka, and Mori (2001) also find similar problems for a wider set of the FILP agencies. Our paper complements their analyses by using more recent data. Most importantly, we use the financial statements of public corporations based on the accounting standard for private sector corporations, which were published only in 2001 and hence not available for Iwata (1998) or Doi, hatanaka, and Mori (2001). We find the problems that those authors identified are observed even with a supposedly better accounting.

Kikkawa, Sakai, and Miyagawa (2000) also examine the financial health of selected FILP agencies. Their study focuses on the future expected cash flows of the agencies. They estimate the present value of the future losses (negative cash flows) of the FILP agencies to be much higher than the estimates published by the Ministry of Finance. In contrast to their analysis, our paper examines the losses that have already incurred by the FILP agencies but not necessarily recognized. The expected future losses identified by Kikkawa et al. (2000) would just add to the already serious problem.

[2] "Review of Public Bodies Uncovers Sad Reality" *Nikkei Weekly*, June 25, 2001.

Yoshida and Konishi (1996) was the first comprehensive analysis of the financial conditions of the FILP agencies. Perhaps hindered by incomplete disclosure and improper accounting, they failed to recognize the serious financial problem hidden in the FILP. It is also possible that the magnitude of the problem was not as large as it is today. Using more recent data, we find much a bigger problem than they found. Our paper also examines the financial health of local governments, which was not studied in Yoshida and Konishi (1996).

Our paper is also different from the existing literature in examining the impacts of the FILP reform in 2001. Iwamoto (2001b) and Higo (2001) contain very useful description of the FILP reform of April 2001. Our paper is the first one that tries to examine the impacts of the reform empirically.

The paper is organized as follows. In Section 2, we briefly describe how the FILP is structured. The section also discusses the essence of the FILP reform introduced in April 2001. Section 3 starts the investigation of the financial health of the FILP agencies. Simply looking at the published accounting numbers reveals some losses at the FILP recipients, but we point out three reasons why the published numbers are likely to underreport the true magnitude of losses substantially. First, the assets of some government financial institutions are inflated by the deferred losses and the counterparts to guarantees and acceptances. Second, non-performing loans at the government financial institutions and some SPCs are under-reported and under-reserved. Third, the physical assets of some corporations are overvalued due to improper depreciation accounting. Section 3 examines the balance sheets of the major FILP recipients, correcting for all three problems. We find that a substantial amount of capital (most of which were contributed by the government) was already impaired at these corporations and some of them are considered to be already insolvent. In total, ¥ 7.3 trillion of the government capital is estimated to have been already lost. The total size of insolvency is estimated to be ¥ 10.1 trillion. Thus, the government would need ¥ 17.4 trillion (or 3.4% of GDP) just to deal with the insolvencies and restore the capital of the FILP agencies to the original levels. Section 4 studies the financial conditions of local governments, which are also important borrowers of the FILP. We find the current amount of local debts substantially exceeds the amount that they can repay without drastically changing the current pattern of revenues and expenditures. We estimate that the FILP loans to the local governments exceed their debt capacity by about ¥ 30 trillion. In Section 5, we evaluate the effects of the FILP reform that are observable so far. Section 6 concludes.

2. FILP: Old and New

The FILP is a set of government-sponsored programs that finances government financial institutions and other government-related agencies. The FILP is not just a system of simple financial intermediation because the government and the FILP agencies are also linked through flows of direct grants and subsidies. This section gives a brief overview of the FILP to give a background for the analysis below. We will also review how the FILP Reform that started in April 2001 is supposed to change the FILP in the long run.

Figure 1 presents a diagram that describes the structure of the FILP before the reform of 2001, paying a particular attention to the interrelations between financial intermediation and fiscal transfers. A box in the figure represent a sector or an institution involved in the FILP and the arrows between the boxes represent transactions between the sectors. Solid lines represent financial transactions, and broken lines represent fiscal transfers.

There are four sources of funds for the FILP: Industrial Investment Special Account, Trust Fund Bureau (TFB) Fund, Postal Life Insurance Fund, and Government-guaranteed Bonds. Of these, the TFB Fund is by far the most important source. At the end of March 2001, for example, the balance of the TFB Fund amounted to ¥ 440 trillion, while the Postal Life Insurance Fund contributed ¥ 62 trillion to the FILP, the outstanding government-guaranteed bonds issued by the FILP agencies was ¥ 25 trillion, and the contribution from the Industrial Investment Special Account was just ¥ 3 trillion.

The TFB Fund in turn has two major sources of funds. The majority of the funds come from the postal savings. The other major source of funds is the pension reserves, which are the difference between the premiums receipts and pension payouts for the public pension system during the current fiscal year. At the end of March 2001, ¥ 247 trillion of the TFB funds were deposits from the postal savings, and the pension reserves contributed another ¥ 143 trillion. Table 1 summarizes the sources of the FILP funds at the end of March 2001.

The uses of FILP funds consist of the following five categories. First, the funds are loaned out to the FILP agencies (government financial institutions and the SPCs). Second, the funds are used to finance some special accounts of the central government. Third, a portion of the funds is loaned back to the postal savings to be invested in the financial market at their discretion. Fourth, the TFB funds are also used to buy bonds issued by local governments. Finally, the remaining TFB funds are used to buy the central government bonds and make some short-term loans. The first four uses of the FILP funds are formally put into the "FILP Plan" every year and are submitted as an attachment to the budget bill to the Diet. Thus, the size of FILP Plan (for example, ¥ 418 trillion for the end of March 2001) is strictly smaller than the total size of the FILP, which includes the TFB's holding of government bonds and other financial assets.

Table 2 shows the uses of the FILP funds at the end of March 2001. About a half (¥ 260 trillion) is used to finance the FILP agencies. About 10% is lent back to the postal savings (¥ 57 trillion). A substantial portion of the funds is used to buy local government bonds (¥ 87 trillion or 17% of the total funds). The central government bonds explain the majority (¥ 79,961 billion) of the remaining funds.[3]

When the FILP started in the 1950s, financing the economic recovery was the most important goal for the government. Hence, the FILP heavily targeted the industrial financing through the Japan Development Bank (predecessor of the present Development Bank of Japan) and other government financial institutions. As the economy recovered and started to grow

[3] The amount of government bonds reported here includes ¥ 7,279 billion of TFB loans to the former Japan National Railroad (JNR) and the former JNR Settlement Corporation (JNRSC) that the government assumed. Unlike the other loans to the general account, these loans to the general account are still included in the formal FILP plan.

rapidly, the focus of the program gradually shifted to finance housing and other urban as well as regional development. Providing assistance to small businesses also became an important goal of the FILP. Figure 2 provides a breakdown of the FILP Plan for fiscal 2001 by target areas.[4] The figure shows more than a third of the new funds is used to provide housing financing. Projects to improve living standard (such as building sewer systems) and those to assist small businesses are also important target areas. Financing industrial development does not constitute a large area for the FILP Plan now: only 1.8% of the new funds are used for this purpose.

On April 1, 2001, the FILP went through a "fundamental reform." *FILP Report 2000* (p.24) lists three shortcomings of the old FILP that motivated the reform. First, the TFB, which handles all the deposits from postal savings and pension reserves, may have become too big to be efficient. Second, too much consideration for depositors of the TFB (pension funds and postal savings) may be keeping the cost of FILP funds too high. Third, nontransparent nature of the subsidies components in the FILP may be hiding substantial future burdens for the taxpayers.

To address the first problem, the reform abolished the requirement for the postal savings and pension reserves to deposit all the funds to the TFB. The reform also abolished the TFB itself and changed the way the FILP agencies raise their funds. Under the new FILP, the agencies can raise funds in three ways. First, an agency can issue FILP agency bonds, which will be traded in the market. The Framework of the Fundamental Reform declares that each agency should "make utmost effort to issue FILP agency bonds" (*FILP Report 2000*, p.28). Agencies that are not healthy enough to place FILP agency bonds in the open market can issue bonds with government guarantee. Finally, the agencies can tap the funds collectively raised through the issuance of FILP bonds by the Fiscal Loan Fund (FLF), which has inherited the personnel and assets of the TFB.

Use of FILP agency bonds rather than the TFB funds can potentially eliminate the second problem, if some FILP agencies can issue bonds at lower yields than they have been paying for the TFB funds.

Finally, the third problem (non-transparency) is addressed by requiring further disclosure of FILP agencies and the FILP system as a whole. Two specific measures to enhance disclosure have been implemented. First, starting in fiscal 1999, the government started to calculate the "policy cost" for each FILP agency and publish the result. The "policy cost" is defined to be the present discount value of the stream of net transfer from the government to the FILP agency. This measure reveals the expected cost for the government (and eventually for the taxpayers) to sustain the operation of the FILP agency. Second, all the special public corporations (which include many FILP agencies) are now required to publish "administrative cost statement." The administrative cost is calculated as what the operating loss would be if the accounting standard for the private sector corporations were applied to the FILP agency plus the opportunity cost of the government funds used as the capital for the agency.[5] In the process of calculating the administrative cost, each agency creates the balance sheet and the income statement using the

[4] Cargill and Yoshino (2000, Table 8.3) show the uses of the FILP funds broken down by the target areas for fiscal year from 1955 to 1998.

[5] Fukao (1998) pointed out the importance of including the opportunity cost of the government funds in the cost of maintaining FILP agencies.

accounting standard for the private sector firms, which are published as a part of the administrative cost statement.

Although the reform of the FILP was launched on April 1, 2001, its implementation was planned to be gradual and many "transitional measures" are provided. For example, the postal savings and the pension reserves have commitment to buy a substantial amount of the FILP bonds until the market for the FILP bonds fully develops. Moreover, the postal savings and the postal life insurance fund plan to buy bonds directly from local governments, because most of the local governments would have trouble floating their bonds in the market. Thus, the "discretion" that the postal savings and other funds have is seriously limited during the "transition" period.

Figure 3 shows a diagram of how the FILP system will look when the "transition" is complete. Comparing to Figure 1, which shows the old FILP, we can note some important changes that will be introduced by the reform. First, the Fiscal Loan Fund replaces the Trust Fund Bureau Fund. Second, postal savings and pension reserves are not automatically deposited into the TFB (or FLF). They invest all their funds at their discretion in the financial market. Third, the FLF, unlike the TFB, does not buy government bonds. Finally, the FILP agencies will raise fund through issuing FILP agency bonds.

The comparison also reveals the possibility that the new system will not substantially differ from the old system after all. For example, postal savings may continue to buy FILP bonds, and the FILP agencies may continue to borrow from Fiscal Loan Fund. Then, the resulting flow of funds is exactly the same as that under the old system, with the name of the intermediary (FLF rather than TFB) being the only difference. Figure 3 shows, in this way, it is possible for the new system to just replicate the fund flows under the old system even after the "transitional measures" expire. Moreover, local governments will not be required to issue bonds in the financial market and continue to depend on the FLF even after the transitional measures expire.

Thus, the FILP reform may not substantially change the flows of funds observed in the old system, although the government claims the reform "fundamental." The introduction of FILP agency bonds, which are supposed to be without government guarantees, may not change the situation very much, either. The market may continue to believe the FILP agency bonds are implicitly guaranteed by the government.[6]

Some early evidence on the impacts of the reform will be studied in Section 5 below. Before we examine the future of the FILP, we look at the current status of the FILP and estimate how much cost for the taxpayers is hidden in the current FILP.

[6] Wallison (2001) makes an interesting comparison between FILP agency bonds and bonds issued by Government Sponsored Enterprises (GSEs), such as the Federal National Mortgage Association (Fannie Mae) in the U.S. He points out that even though the U.S. legislation explicitly states that Fannie Mae securities are not government guaranteed, the yields on Fannie Mae securities are only slightly higher than the US Treasury bonds. Thus, he is skeptical on the idea of the market discipline introduced by the FILP agency bonds.

3. Financial Condition of the FILP Agencies

This section and the next examine the financial condition of the FILP by looking at the financial solvency of the recipients of the FILP. Table 3 lists all the FILP recipients with the outstanding amount of FILP loan for each as of the end of March 2001. There are 10 central government accounts, 7 government financial institutions, 23 special public corporations (SPCs), 6 special firms, and local governments in the group. The table shows the outstanding loans from the Trust Funds Bureau (TFB) to these government accounts and special corporations amounted to ¥ 328 trillion in total. The number includes the special public corporation bonds held by the TFB. Noting that ¥ 57 trillion is the FILP loan back to the Postal Savings System (PSS) and hence can be netted out, we focus on the remaining ¥ 271 trillion loans. Five of the 10 central government accounts (Special Account for Consolidation of Specific National Property, SA for National Schools, SA for Government-Operated Land Improvement Projects, Road Improvement SA, and SA for Airport Development) do not publish their balance sheets, which makes it difficult for us to assess their solvency. Fortunately, the total FILP loans to these accounts amounts to $4 trillion, which is less than 1.5% of the net FILP loans ($271 trillion). Thus, we exclude the five special accounts from our analysis. This section examines the financial conditions of the other special accounts, government financial institutions, special public corporations, and special firms. Section 4 studies the financial conditions of the local governments, whose borrowings amount to almost 26% of the net FILP loans.

The FILP loan to the general account, which amounts to ¥ 7.3 trillion, requires an explanation, since it is not a loan to the central government in general. This consists of the FILP loan to the former JNR that was assumed by the government when it was privatized in 1987 and the loan to JNRSC that was assumed by the government when its statute expired in March 1998 (at the end of fiscal 1997) with the remaining liability of ¥ 24.2 trillion. Thus, the FILP loan of ¥ 7.3 trillion as of March 2001 should really be considered a loan to these already failed corporations.

The remaining government accounts and other public corporations borrow ¥ 190 trillion from the FILP. We can examine their solvency by looking at the balance sheets. The publicly disclosed accounting statements of many public corporations, however, contain some serious problems, which make it hard for outsiders to assess their financial conditions. For our purpose, three types of problems are especially serious.

First, some corporations list current or cumulative losses on the asset side of the balance sheet, which inflates the assets figure. They do this so that they can pay for such losses over time by gradually reducing the capital. Since these losses have been already identified and are not likely to be eliminated (without corresponding reduction of the capital or infusion of new capital), we need to subtract these items from the capital immediately to get an unbiased picture of the current financial condition of the corporation.

Similarly, some corporations show "guarantees and acceptances" on the liability side and carry its counterpart on the asset side. Because the guarantees and acceptances should be paid out of the future profits, which would otherwise be added to the capital, we should really subtract this item from the capital.

Second, many corporations, especially government financial institutions, are likely to have substantial amount of non-performing loans. The accounting rule for these public corporations require them to disclose only those loans that are past due for more than 6 months as non-performing. This is much more limited than the disclosure of non-performing loans by banks in the private sector. For example, the risk management loans, which Japanese banks disclose in their financial statements, include the loans for failed enterprises, the past due loans of more than 3 months, and the restructured loans. Even the narrowly defined non-performing loans disclosed by the government financial institutions are not fully reserved. Thus, to get a clear picture about the financial condition of these corporations, we need to take into account the under-reporting and under-reserving of non-performing loans.

Finally, the amount of physical assets reported on the balance sheets of the SPCs may not reflect the true value of those assets, because (i) the assets do not reflect their market value, and more importantly (ii) the assets are not properly depreciated at many corporations. Use of book values instead of market values may actually understate the true value of assets if the assets (such as land) were purchased long time ago. On the other hand, if the corporation has the assets that have recently lost their values (such as land purchased in the 1980s), the book value may overstate the true value.

Improper depreciation of physical assets is a more serious problem and it tends to overstate the amount of existing assets. For example, Iwamoto (1998a, p.166) reports the Japan Highway Public Corporation is allowed to (and actually do) accumulate reserves for depreciation out of profits whenever they feel convenient instead of charging depreciation every year. Hence the assets figures found on their balance sheet are gross capital numbers, which include the past depreciation. In order to get the net capital numbers, one has to subtract the cumulative reserves (for future redemption of loans) from the capital. The net capital calculated in this way still suffers from the problem of under-reporting of depreciation, because the corporation can charge depreciation only when sufficient amount of profit is realized.

The Japanese government has started to pay attention to these accounting problems only recently. In June of 2001, the Fiscal System Council of the Ministry of Finance came up with a recommendation on the accounting disclosure of the SPCs, which required many SPCs to prepare financial statements using the accounting rules for private sector companies. Following the request from the Fiscal System Council, the SPCs submitted the new financial statements called "administrative cost statement" (*gyôsei cost keisansho*), which includes the balance sheets and income statements following the private sector rules, by the end of September 2001. Appendix 1 lists the balance sheets and income statements in the administrative cost statements compiled by the public corporations that are the subjects of our study.

The administrative cost statements correct for some of the accounting problems that we identified above. For example, the Fiscal System Council's guideline requires the SPCs to adjust the depreciable assets for depreciation. The guideline also requires the government financial institutions to disclose the non-performing loans using the criteria for the risk management loans.

Problem remains, however. When we examine the published administrative cost statements, we find many corporations failed to account for the depreciation of the assets retrospectively. Some corporations continued to count losses as assets. The under-reporting of non-performing loans is likely to be smaller than before, but it reveals more serious under-reserving of non-performing loans. Thus, we still need to modify the published financial statements to get a clearer picture of the financial condition of the SPCs.

The measure we use here to assess the solvency of a corporation is the capital ratio, which is calculated as the ratio of total reserves (which corresponds to the capital in a private sector corporation) to total assets. The capital ratio is considered to be a measure of how much loss that the corporation can sustain without requiring additional resources from the government (unlike the JNR, for example). If the capital ratio is negative, the public corporation is insolvent. Since the government is both large creditor and equity holder of a public corporation, insolvency implies future losses for the government and hence the taxpayers. If the capital ratio is positive but very small, the corporation would not be able to stand even a small amount of loss without relying on new money from the government and the taxpayers.

Table 4 lists the capital ratios for each government account or corporation. The column "Original Balance Sheet" shows the capital ratios calculated from the balance sheets based on the accounting standard for public corporations. The next column "Administrative Cost Statement" shows the capital ratios calculated from the balance sheets in the administrative cost statements, which are based on the accounting standard for private sector firms. Comparing these two columns, we can see the capital ratio declines for many corporations when they reorganize their balance sheets based on the accounting standard for the private sector.

Even with the capital ratios calculated from the original balance sheets, three SPCs (Pension Welfare Service Public Corporation, Japan Sewage Works Agency, and Honshu-Shikoku Bridge Authority) are insolvent. The figures calculated from the administrative cost statements show that as many as seven corporations (National Life Finance Corporation, Japan Environment Corporation, Japan Scholarship Foundation, and Japan Railway Construction Public Corporation in addition to the three above) are insolvent.

The last column of Table 4 reports the capital ratios corrected for the first accounting problem that we identified above. When the corporation still lists losses or counterpart to the acceptances and guarantees on the asset side of the balance sheet, we shift those to the liability side and subtracted those from the capital. For many corporations, the adjusted capital ratios are not very different from the capital ratios calculated from the administrative cost statements. Thus, most obvious accounting irregularities that we find in the original balance sheets of public corporations seem to disappear in the administrative cost statements. In this sense, the requirement of publishing administrative cost statements has already made an important contribution to the goal of better disclosure of public corporations.

Our adjustment adds one more corporation to the list of insolvent public corporations. It is Government Housing Loan Corporation: the largest borrower of the FILP. Even in the administrative cost statements, their capital is over-stated because ¥341 billion of "special

losses" are reported as an asset item. When we subtract this from the capital of ¥ 153 billion, the Government Housing Loan Corporation becomes insolvent.

Using the numbers reported in Table 3, one can calculate the total amount of FILP loans to the eight FILP agencies that are insolvent. The calculation shows ¥ 120 trillion of the FILP loans are for those insolvent public corporations. Thus, the correction of the first accounting problem already reveals that 45% of the net FILP loans are lent to insolvent public corporations.

Let us move on to make the other two adjustments. Table 5 (column 2) shows the amount of non-performing loans disclosed in the administrative cost statement of each corporation. The definition of bad loans used for the administrative cost statements for government financial institutions is the same as the definition for the risk management loans disclosed by non-government banks. The other public corporations, however, are not required to disclose the risk management loans. Thus, the bad loans figures reported in Table 5 for non-financial public corporations are still based on the old definition of bad loans and their coverage is strictly narrower than the risk management loans. Thus, the table provides at best a lower bound for the amount of bad loans at these public corporations. Table 5 shows that the total amount of disclosed bad loans at the FILP agencies amounts to ¥ 5.6 trillion. This is 4.9% of total loans by those institutions.

A more serious problem is that many of the institutions hold only a small amount of loan loss reserves and hence the bad loans are severely under-reserved. The fourth column of the table shows the amount of loan loss reserves for each institution and the fifth column shows the degree of under-reservation (difference between column 2 and column 4). Adding up all the positive numbers (which show under-reservation) in column 4, we find the total under-reservation reaches ¥ 3.2 trillion.

Finally, we turn to the issue of over-reporting of depreciable assets due to (i) improper depreciation and (ii) lack of market value accounting. For 12 corporations that carry large amounts of physical assets on their books, we re-evaluate their assets to reflect the market value changes and proper depreciation.[7] Appendix 2 explains the method in details. The appendix also lists the depreciation rates and the land price series that we use for each corporation.

Table 6 shows the result of re-evaluation. Comparing the amounts of business assets reported on the original balance sheets to those reported in the administrative cost statements (the second and third columns), we find some public corporations adjusted their assets figures substantially downward. Our calculation suggests, however, the numbers in administrative cost statements are still over-stated. As one would expect, the extent of over-valuation is small for Teito Rapid Transit Authority and Electric Power Development Company, which are believed to have been publishing balance sheets comparable to those by private sector companies (and hence are not required to file administrative cost statements. For the other public corporations, the extent of overvaluation exceeds 10% and typically reaches around 20% to 30%.

[7] We were not able to reevaluate the assets of Japan Regional Development Corporation and Japan Green Resources Corporation, because the change in the accounting rules in 1986 prevented us from coming up with consistent time series.

To summarize the impacts of under-reserved bad loans and overstated value of assets on the solvency of FILP agencies, Table 7 calculates the "net" capital for each agency after adjusting for the under-reservation and the over-valuation. The table lists only those corporations that (i) are insolvent after a simple re-arranging of the balance sheets in the administrative cost statements that we so above, (ii) do not have enough loan loss reserves to cover the disclosed non-performing loans, or (iii) have overvalued assets on their balance sheets. Column (1) shows the amount of capital that we used to calculate the adjusted capital ratio in Table 4. Column (2), taken from Table 5, shows the extent of under-reservation of bad loans. Column (3) shows the extent of overvaluation of assets implied by the numbers in Table 6. The last column (4) shows the amount of net capital, which is calculated by subtracting (2) and (3) from (1). The last row (sum of negative capitals) shows the sum of the negative numbers in each column for Columns (1) and (4).

Table 7 shows that in addition to eight corporations that are found to be insolvent in Table 4, six more corporations become insolvent when we make a proper adjustment for their bad loans and over-valued assets. We can add up the FILP loans to these *de facto* insolvent corporations (using the figures in Table 3) and find ¥ 139 trillion are for the insolvent corporations.

Of course, not all the ¥ 139 trillion has been lost. The FILP would be able to collect a certain proportion of the bad loans. In fact, since the borrowers are all government or quasi-government institutions, we would expect the FILP loans be paid in full eventually, using taxpayers' money if necessary. But, the funds the agencies receive so that they can pay back the FILP loans would constitute an additional liability for the future taxpayers and should be considered as a cost of the FILP. If we assume, somewhat arbitrarily, that as much as 75% of the bad FILP loans can be collected without increasing the current levels of subsidies to these institutions, we find it will cost ¥ 35 trillion of taxpayers' money, which amounts to 7% of GDP.

A more conservative estimate of the amount of losses hidden in the FILP can be obtained by adding up all the negative reserves at the FILP agencies, which is reported on the last row of the last column of Table 7. The ¥ 10.1 trillion is the money that the FILP institutions have already lost and that someone (probably taxpayers) has to pay when the loss is realized.

Note that the ¥ 10.1 trillion is the amount of new money that will be required to cover the hidden losses in the FILP. This is in addition to the government contributions to the FILP agencies in the form of capital, which have already been lost (completely for insolvent corporations and partially for other under-capitalized corporations). Table 8 presents an estimation of the amount of government contributions that have already been lost. For each public corporation, the second column of the table shows the amount of government contribution on the balance sheet. The third column shows the adjusted net capital that has been corrected for all the accounting problems that we have identified above. If the adjusted net capital is negative (which is the case for 12 corporations as we saw above), all the government contribution in the corporation is considered to have been lost. If the adjusted net capital is positive but smaller than its book value, we calculate the difference between the original government contribution and the government portion of the current capital. The difference is the amount of the government capital that has been lost. The estimated government losses are reported in the last column of the

table. Of ¥ 21.9 trillion of the government funds in the FILP agencies, ¥ 7.3 trillion has been already lost. Thus, to deal with *de facto* insolvencies of the FILP agencies *and* to replenish their capitals to the original levels, the government needs ¥ 17.4 trillion.

4. Financial Condition of the Local Governments

The amount of FILP loans to local governments each year is determined in a process that is led by the Ministry of Public Management, Home Affairs, Posts and Telecommunications (Ministry of Home Affairs before the government restructuring in 2000). The process requires any local government that plans local bond issues to obtain permission from the Ministry in advance. When a permission is granted, the Ministry also decides how much of the local bonds will be bought by the TFB. The process has no guarantee distributing the FILP loans to financially healthy entities. Worse, the FILP loans may be used by the Ministry of Home Affairs as a device of distributing more funds to financially troubled local governments.

The finding in Doi (2002) suggests that the distribution of the FILP loans may in fact be skewed toward financially poor governments. He finds a local government that depends heavily on the FILP loans tends to have low tax revenues and large amount of local allocation tax grants, which are distributed to make up for the shortage of their own tax revenue. [8] Thus, one would suspect that many local governments with high debts are servicing the debts using the money provided by the central government. If this is the case, we would find a substantial amount of non-performing FILP loans to local governments.

Of ¥ 271 trillion of the net FILP loans outstanding at the end of March 2001, ¥ 70 trillion (26%) are loans to local governments and public corporations owned by local governments. Thus, the solvency of local governments is also an important determinant of the financial health of the FILP. The local governments, however, are not required to prepare the balance sheets, which prevents us from applying the approach used for the other FILP agencies to the local governments. In this section, we develop an alternative approach that focuses on the ability for a local government to pay off the current outstanding bonds. For each local government, we calculate its debt capacity that is defined to be the present discount value of the future expected primary surpluses (revenues minus non-interest expenditures). If the currently outstanding local government debt exceeds thus calculated debt capacity, we conclude the local government is *de facto* insolvent.

Since the local government budget data for fiscal 2000 (ending in March 2001) are not available when we performed the analysis, we use the budget data for fiscal 1999 and prior. Of the ¥ 66.5 trillion of the FILP loans to the local governments and public corporations owned by the local governments at the end of fiscal 1999, ¥ 53.4 trillion was for the local governments. We can examine the quality of these ¥ 53.4 trillion worth of loans by studying the financial condition

[8] The local allocation tax grants are general lump-sum grants distributed from the central government to local governments. The sources, specified by the Local Allocation Tax Act, are 32% of (national) Income Tax, 35.8% (32% before 1998) of Corporate Tax, 32% of Liquor Tax, 24% of Tobacco Tax, and 29.5% of Consumption Tax The central government is required to give out larger amount of local allocation tax grants to the local governments with higher expected revenue shortfalls and higher expected debt services.

of local governments. We do not study the quality of loans to public corporations owned by local governments. Thus, the estimated losses that we report should be understood as a lower bound for the losses hidden in the ¥66.5 trillion FILP loans to local governments and local public corporations.

We start by estimating the future primary surpluses for each local government. In the baseline case (Scenario 1), we assume this is constant and equal to the simple average of the primary surpluses in fiscal 1997, fiscal 1998 and fiscal 1999. Letting S_i denote the expected primary surplus for the local government i, we can calculate the debt capacity of the government, denoted by B_i^* as:

$$(1) \qquad B_i^* = \max\left\{\frac{S_i}{r}, 0\right\},$$

where r is the constant discount rate, which we assume to be 4% in the calculations below. Note that we assume the debt capacity cannot be below zero. Thus, if a local government runs primary deficit, its debt capacity is defined to be zero. By comparing B_i^* to the outstanding debt as of the end of March 2000, denoted by $B_{i,2000}$, we can calculate the amount of debt that is not likely to be paid off. Let us define $DF_{i,2000}$ as:

$$(2) \qquad DF_{i,2000} = \max\left\{B_{i,2000} - B_i^*, 0\right\}.$$

If $DF_{i,2000}$ is strictly positive, we say the local government is *de facto* insolvent and the size of $DF_{i,2000}$ shows the magnitude of insolvency.

The result, of course, depends critically on the estimated level of S_i. Since we estimate the future primary surplus from the data for three years in the late 1990s, when the Japanese economy was in stagnation, the estimated primary surplus might be lower than the long-run level of primary surplus that is expected to prevail after the economic recovery. To address this concern, we consider an alternative scenario (Scenario 2) that assumes the general revenue (tax revenue, local transfer taxes, and local allocation tax) increases by 20% in the first year and stays there.

Another assumption in the baseline scenario is that the future primary surplus is not expected to grow. Scenario 3 considers an alternative where the future primary surplus is expected to grow at 2% every year. Changing the growth rate of the primary surplus from 0% to 2% is equivalent with increasing the discount rate by 2% in our framework.

In the first three scenarios, we assume the local governments can continue to rely on the local allocation tax grants that are distributed by the central government. The system of local allocation tax grants, however, is likely to change in the near future. The overhaul of the local allocation tax grants system is an important part of the fiscal decentralization that the Japanese government has been deliberating over the past several years. The government created the Decentralization Promotion Committee within the Cabinet Office in 1995, and started drafting the plan for decentralization. The committee published the final report in June 2001.[9] On the

[9] The final report is available at http://www8.cao.go.jp/bunken/bunken-iinkai/saisyu.

issue of the local allocation tax grants, the committee argues that there should be a transfer of tax bases from the central government to local governments to improve the fiscal condition of the local governments and that the local allocation tax grants should be reduced so that the transfer of tax bases is neutral to the total tax revenue (central and local).[10]

Thus, in Scenarios 4, 5, and 6, we consider the case where the system of local allocation tax grants is completely decentralized. The tax base for local allocation tax grants is assumed to be transferred to the local governments according to their current size, so that the tax revenues of local government increases in proportion to the current level but the local allocation tax grants become zero. Scenario 4 assumes the expected future primary surplus is given by the average primary surplus for fiscal 1997, 1998, and 1999. Scenario 5 assumes the general tax revenue to increase by 20% in the first year and stays there. Scenario 6 assumes the future primary surplus is expected to grow at 2% per year.

Table 9 summarizes the results of our calculation. At the end of fiscal 1999, the total debts outstanding for 47 prefectures, 694 cities (and wards in Tokyo) and 2,564 towns and villages amounted to ¥ 120 trillion, of which ¥ 53.4 trillion was owed to the Trust Fund Bureau.[11] The table shows the results under several alternative scenarios described above. If the current system of local allocation tax grants continues and if the primary surpluses of local governments do not improve, the current level of local debts is estimated to exceed the debt capacity by ¥ 96 trillion. In other words, without any changes (such as increased local taxes, reduced local spending, or more subsidies from the central government), local governments would have to default ¥ 96 trillion of debts collectively. Assuming the TFB loans to the local governments have the same seniority as the other debts, the default of ¥ 96 trillion of debts would imply the default of ¥ 37 trillion of the TFB loans (or 69% of the total TFB loans to local governments).

When we assume the system of local allocation tax grants will be decentralized (Scenario 4), the debt capacity improves for some prefectures and cities, while the debt capacity of many towns and villages declines. This is because the current allocation of local allocation tax grants is skewed in favor of financially poor local governments, which include many towns and villages. In overall, the total amount of estimated default falls to ¥ 82 trillion yen. The implied default of the TFB loans, however, stays at ¥ 37 trillion, suggesting fewer defaults by the prefectures and cities are almost exactly offset by more defaults by towns and villages.

To take into account the possibility that 1997-1999 were abnormally bad years for local government finance, Scenarios 2 and 5 assume the general revenue in the future will be 20% higher than the 1997-1999 level for each local government. If we assume the current system of local allocation tax grants to continue (Scenario 2), the 20% increase in the general revenue (including the local allocation tax grants) has a substantial impact in many local governments. The total amount of estimated default falls to ¥ 15 trillion, which is still large but less than 20% of the estimate in Scenario 1. The implied default of the TFB declines to ¥ 6 trillion. When we

[10] See, for example, Chapter 3, Section 1 of the final report (http://www8.cao.go.jp/bunken/bunken-iinkai/saisyu/3.html).

[11] These amounts are outstanding in the Ordinary Accounts of local governments, and do not include one in their Enterprise Accounts and public corporations owned by them. The Ordinary Account typifies the financial status of the local government.

assume the decentralization of local allocation tax grants system (Scenario 5), the impact of the 20% increase in the general revenue is much smaller. The total amount of estimated default is ¥ 61 trillion, and the implied default of the TFB loans is ¥ 29 trillion. Comparison of the results in Scenarios 2 and 5 suggests that the increased debt capacity of local governments in Scenario 2 mostly results from the increased local allocation tax grants at the local governments that are already receiving disproportionately large allocations. When the system of local allocation tax grants is decentralized, these localities lose the extra large allocations. The result suggests that many such local governments would not be able to meet the debt payments without the re-distribution through local allocation tax grants at the current magnitude.

Scenarios 3 and 6 allow the primary surplus of each local government to grow at 2% per year. This change obviously enhances the debt capacities of some local governments, but the expected amount of insolvency are not very much different from that implied by Scenarios 1 and 4. The total amount of expected default is ¥ 89 trillion for Scenario 3 and ¥ 81 trillion for Scenario 6. The implied default of the TFB loans is ¥ 34 trillion (Scenario 3) and ¥ 37 trillion (Scenario 6).

As we discussed above, the calculations in Table 9 were done using the data for the fiscal 1999 because of the data constraint. Thus, the estimate of the TFB loans default (between ¥ 6 trillion and ¥ 37 trillion) applies to fiscal 1999. We should note, however, the TFB loans to the local governments and corporations in fiscal 2000 (¥ 70 trillion) was roughly comparable to the fiscal 1999 level (¥ 67 trillion). Moreover, the TFB loans to local public corporations were not examined. Thus, the magnitude of the estimated default for the fiscal 2000 loans is expected at least as large as the figures in Table 9.

Table 10 summarizes the results of this section and the previous section. Out of ¥ 271 trillion of the net FILP loans, ¥ 139 trillion are loans to *de facto* insolvent public corporations. Another ¥ 29 trillion to ¥ 37 trillion are loans to financially troubled local governments. If we add ¥ 7.3 trillion of JNR-related debt to the general account, the total bad FILP loans reach ¥ 176 trillion to ¥ 183 trillion (65% to 68% of the total net FILP loans), or 35-36% of GDP. Even if we assume that as high as 75% of those will be recovered, the total loss will be ¥ 44 trillion to ¥ 46 trillion, or around 9% of GDP.

5. Early Evidence on the Effects of the FILP Reform

Our analysis in Sections 3 and 4 suggest that many recipients of the FILP, both public corporations and local governments, are *de facto* insolvent without additional financial help from the central government (and eventually by the Japanese taxpayers). Thus, the FILP is likely to be hiding a substantial amount of losses. Our estimates suggest that ¥ 176 trillion to ¥ 183 trillion of the FILP loans (65-68% of the total) as of the end of March 2001 are bad in the sense that those are loans to *de facto* insolvent entities.

This section examines whether the FILP reform of 2001 will change the situation. The reform would not change the losses that the FILP has already sustained, but it may prevent the public corporations from accumulating further losses. After the reform, the public corporations

are supposed to raise funds from the financial market. The postal savings and pension reserve funds, which used to fund the corporations automatically through the FTB start investing their funds in the financial market, without necessarily buying the FILP agency bonds or the FILP bonds. These changes may put the public corporations under the market monitoring. A loss-accumulating corporation may have difficulty in raising funds and may be forced to restructure its operation. Or the central government may be forced to subsidize the corporation explicitly so that the corporation can continue the loss-making but socially beneficial activities. Either way, the amount of hidden loss in the FILP would decline.

Hardly a year from the start of the reform, it may be too early to judge the success or failure of the reform, but we examine some early data to see whether the reform looks promising. More specifically, we study two sets of data. First, we look at how uses of funds of the postal savings and sources of funds of the FILP agencies have started to change. The financial flow in the FILP needs to go through substantial changes to put the FILP agencies subject to the market discipline. As we saw in Section 2, however, the FILP reform may not necessarily change the flow of funds between the postal savings and the SPCs. If the postal savings choose to buy FILP agency bonds, FILP bonds, and local government bonds, the financial flow of the old FILP can be still replicated in the reformed FILP. We examine how much change of the financial flow that we can detect in the early data.

Second, we study the secondary market pricing of the limited number of FILP agency bonds that are traded. The key question we ask is whether the market sees these bonds as having implicit government guarantees. If the market believes that the bonds issued by FILP agencies are implicitly guaranteed by the government, they will not have any incentive to monitor and evaluate the projects taken by the agencies. Then the market discipline, which the reform tries to introduce, would not work.

Table 11 shows the planned uses and sources of postal savings funds for the first two years after the FILP reform (fiscal 2001 and 2002). The table shows the majority of new funds of the postal savings are still planned to be invested in the FILP. For example, the plan for fiscal 2001 specifies that ¥ 15.8 trillion of the total net new funds of ¥ 24.5 trillion is used to buy FILP bonds. Another ¥ 1.2 trillion is slated for buying JGBs and another ¥ 2 trillion is planned for loans to local governments and public corporations. The plan for fiscal 2002 gives us a similar picture. Thus, we cannot detect any substantial changes in the uses of postal savings funds following the FILP reform. We can conclude that the allocation of the postal savings so far has been heavily constrained by the transitional measures that require the postal savings to absorb a substantial amount of FILP bonds.

The sources of funds for the FILP agencies also have shown little changes. Table 12 shows the amount of the FILP loans to the public corporations in the FILP plans for fiscal 2001 and 2002 and compares those to the size of FILP agency bond issues. Although the introduction of FILP agency bonds is perhaps the most important aspect of the reform, the bonds have not become a major source of funds for public corporations. In fiscal 2001, public corporations planned to issue ¥ 1 trillion of FILP agency bonds all together, which is only 5% of their FILP loans. In fiscal 2002, the public corporations plan to step up on their efforts to issue FILP agency bonds (¥ 2.5 trillion worth of bond issues are planned) while the FILP loans will shrink.

The amount of FILP agency bonds, however, will still be less than 15% of the FILP loans. At this rate, it would take a long time for FILP agency bonds to become the majority source of new funds. It would take longer for the agency bonds to be the dominant source of funds in terms of stock. Thus, we have not observed a significant change in the pattern of financial flow to public corporations.

How does the financial market view the FILP agency bonds, which is supposed to be without government guarantee? First, we look at ratings of these bonds given by rating agencies. Table 13 shows the bond ratings for FILP agencies granted by major rating agencies. R&I (Rating and Investment Information, Inc.) has the largest coverage of all the three major rating agencies and rates bonds issued by 14 FILP agencies. For two government financial institutions (Development Bank of Japan and Japan Bank for International Cooperation), the ratings are as high as the rating of the Japanese government bonds (JGBs). Most of the others receive AA-, AA, or AA+, which are one notch below the rating of JGBs. The Urban Development Corporation gets the lowest rating of A+. Thus, R&I seems to distinguish the qualities of the FILP agency bonds. The variation of ratings among different FILP agencies suggests that R&I does not see all those bonds are government guaranteed.

The other rating agencies (Moody's Japan and Standard & Poor's) have a limited coverage of the FILP agency bonds. Their ratings of FILP agency bonds are as high as their rating of the JGBs with only one exception (S&P rates Japan Highway Public Corporation bonds as AA-, slightly below the JGB rating of AA). Thus, the evidence on the market view of the FILP agency bonds is so far mixed. R&I does not seem to believe in any implicit government guarantees of the FILP agency bonds, and rates many of those bonds a notch lower than the JGBs. Moody's and S&P, on the other hand, judge the FILP agency bonds as safe as the JGBs.

Next, we evaluate the market view of the FILP agency bonds implied by secondary market prices of FILP agency bonds. We use the secondary market prices quoted by member companies of the Japan Securities Dealers Association (JSDA). As of February 2002, the prices of fourteen bonds issued by ten FILP agencies that are subjects of our analysis are quoted by 13 to 15 members of the JSDA.[12] We examine the compound yields of the bonds calculated from the average JSDA quotations (after adjusting for outliers) announced every trading day.[13] By comparing the yields on FILP agency bonds to those on JGBs or government-guaranteed bonds (also issued by public corporations), we can see if the market views those FILP agency bonds as implicitly guaranteed.

Figure 4 plots the yields of FILP agency bonds and JGBs against the maturities. The figure clearly shows that the yields of the FILP agency bonds lie strictly above the yield curve of

[12] As of late February 2002, the total of 28 members are required to report the price quotations for the bonds that they deal with. We exclude the FILP agency bonds issued by the Government Housing Loan Corporation from our analysis, because they carry variable coupons, which makes it hard to calculate the compound yields. The FILP agency bond by Public Corporation Finance Corporation is also excluded because it does not have any FILP loans outstanding and hence is not of our investigation in this paper.

[13] The daily data are available at http://www.jsda.or.jp/html/saiken/kehai/ for the most recent two trading days. The monthly data (starting from March 2001) are available at http://www.jsda.or.jp/html/saiken/kehaim/. See http://www.jsda.or.jp/html/saiken/seido.html for a detailed explanation of how the average quotations are calculated.

JGBs. The investors require about 10 to 40 basis points of premium for the FILP agency bonds. Thus, the market seems to view the FILP agency bonds significantly more risky than JGBs.

Similarly, when we compare the yields of FILP agency bonds to the yield curve of government guaranteed bonds (many of which are issued by the same FILP agencies) in Figure 5, we find the market often requires substantial premium for FILP agency bonds. The figure suggests that the market clearly distinguishes the FILP agency bonds from the government guaranteed bonds.

For each FILP agency bond, Table 14 shows the yield spread over the JGB bonds with a comparable maturity. For some bonds that were issued earlier, the table also lists the yield spreads observed at the end of January 2002, December, November, and October 2001. The table shows that the size of yield spread differs substantially from one agency to another, and it has been consistent over time.

The result from the early experience with the FILP agency bonds suggests that the market clearly differentiates between FILP agency bonds and government guaranteed bonds. Thus, the market does not see the FILP agency bonds as fully government guaranteed. Given the poor financial conditions of some public corporations that we discovered in Section 3, the yield spreads of 10-30 basis points seem too small. This may suggest that the market is entertaining some possibility of government guarantee of FILP agency bonds or government bailout of troubled public corporations. Although the FILP reform talked about using the FILP agency bonds as a device to apply market discipline on public corporations, the legal procedure for closing a failed public corporation does not exist, yet. A transparent mechanism to deal with failures of public corporations and defaults of FILP agency bonds is necessary to enhance the market discipline on those corporations.[14] Our result suggests an emergence of market signals on the qualities of FILP agency bonds, but it is not yet clear how useful they will become in improving the allocation of funds.

6. Conclusion

This paper examined the current financial condition of the Fiscal Investment and Loan Program by studying the financial health of the recipients of the FILP loans: mainly public corporations and local governments. The paper found many FILP recipients are *de facto* insolvent. Of the ¥271 trillion of the FILP loans, about ¥180 trillion are considered to be bad.

The losses in the FILP were generated by low profitability of the FILP agencies. In this sense, the problem of the FILP has been impeding the growth of Japanese economy. A large amount of funds provided by households has been used for low return projects. Our estimate suggests that the bad loan problem in the FILP loans is even larger than the well-publicized bad loans problem for private financial institutions.

[14] Iwamoto (1998b) also argues that the commitment for the government not to bail out public corporations is necessary for the FILP agency bonds to work as a disciplinary device. If the government is willing to compensate any losses of public corporations, the holders of FILP agency bonds never have to worry about defaults and hence would never apply disciplinary pressures.

The paper also looked at the impacts of FILP reform introduced in April 2001. We found the financial flow of FILP funds has hardly changed. We also examined how the newly introduced FILP agency bonds have been accepted in the financial market. The data suggest that the financial market distinguishes the FILP agency bonds from government guaranteed bonds, which is a good news if one hopes the FILP agency bonds to introduce the market discipline on the FILP agencies. It is too early to tell, however, whether the FILP agency bonds will become an effective disciplinary device.

One important shortcoming of the 2001 reform is that it did not specify the mechanism to close down poorly performing public corporations. Such a mechanism is a necessary condition for the disciplining through FILP agency bonds to work. Without a credible mechanism to prevent government bailout of *de facto* insolvent public corporations, the market discipline would never develop.

The mechanism to close down failed public corporations is also necessary to deal with the losses that have already been incurred by the FILP. As the experience of JNR and JNRSC shows, it is important to recognize the losses as soon as possible and to decide on the loss sharing mechanism. Without a clear loss sharing mechanism, negotiations between stakeholders would lead to unavoidable delay. Delaying the resolution would just increase the losses.

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Table 1. Sources of the FILP Funds (March 2001: ¥ Billion)

Source	Amount	Proportion to the Total Amount (%)
Industrial Investment Special Account	3,383	0.6
Postal Life Insurance Fund	61,658	11.6
Government-guaranteed Bonds	24,579	4.6
Trust Fund Bureau Fund	439,663	83.1
Postal Savings	247,008	46.7
Pension Reserves	142,593	26.9
Others	50,062	9.5
Total	529,283	100.0

Note: Others include the postal life insurance premium collected during the fiscal year (which is deposited into the TFB), short-term deposits by some special accounts, profits and reserves at the TFB.

Source: *FILP Report 2001*.

Table 2. Uses of the FILP Funds (March 2001: ¥ Billion)

Use	Amount	Proportion to the Total Amount (%)
FILP Agencies	259,617	49.0
Special Accounts	6,298	1.2
Postal Savings Special Account	57,350	10.8
Local Government	87,270	16.5
Central Government Bonds and Others	118,748	22.4
Total	529,283	100.0

Note: The majority of the category "Central Government Bonds and Others" is central government bonds (¥ 79,961 billion). The others include short-term loans (mainly to the Special Account for Grants of Allocation Tax and Transfer Taxes) and short-term financial investments (with maturity less than 5 years), which are outside the scope of the FILP Plan formally approved in the Diet.

Source: *FILP Report 2001*.

Table 3. FILP Loans Outstanding by Institutions (End of March 2001)

Agency	FILP Loans (¥ billion)
[Central Government]	
General Account	7,279
Special Account (SA) for National Hospital	345
SA for Lending Urban Development Funds	671
SA for Consolidation of Specific National Property	944
SA for National Schools	1,037
SA for Government-Operated Land Improvement Projects	1,067
SA for National Forest Service	910
Road Improvement SA	14
SA for Airport Development	1,007
Postal Savings SA	57,350
[Government Financial Institutions]	
Government Housing Loan Corporation	73,348
National Life Finance Corporation	8,071
Japan Finance Corporation for Small Business	2,674
Agriculture, Forestry and Fisheries Finance Corporation	3,422
Okinawa Development Finance Corporation	1,412
Development Bank of Japan	14,064
Japan Bank for International Cooperation	12,385
[Special Public Corporations]	
Urban Development Corporation	11,381
Pension Welfare Service Public Corporation	35,967
Employment & Human Resources Development Organization of Japan	71
Japan Environment Corporation	374
Teito Rapid Transit Authority	287
Japan Regional Development Corporation	293
Japan Sewage Works Agency	106
Social Welfare and Medical Service Corporation	2,699
Labor Welfare Corporation	27
Promotion and Mutual Aid Corporation for Private Schools of Japan	202
Japan Scholarship Foundation	661
Japan Small and Medium Enterprise Corporation	118
Japan Green Resources Corporation	475

(Continued to the next page)

Table 3. (Continued)

Agency	FILP Loans (¥ billion)
Japan Highway Public Corporation	9,437
Metropolitan Expressway Public Corporation	1,543
Hanshin Expressway Public Corporation	1,340
Honshu-Shikoku Bridge Authority	846
Japan Railway Construction Public Corporation	926
New Tokyo International Airport Authority	112
Corporation for Advanced Transport & Technology	2,925
Water Resources Development Public Corporation	1,012
Metal Mining Agency of Japan	40
Japan National Oil Corporation	476
[Local Governments]	
Local Governments	69,618
[Special Firms]	
Shoko Chukin Bank	311
East Japan Railway Company	4
Central Japan Railway Company	5
West Japan Railway Company	4
Japan Fright Railway Company	12
Electric Power Development Company	924
Total	328,194

Source: Ministry of Finance (2001). *FILP Report 2001,* pp.42-43.

Table 4. Capital Ratios of the FILP Agencies (%; End of March 2001)

Agency	Original Balance Sheet	Administ. Cost Statement	Adjusted Capital Ratio
[Central Government]			
General Account	0.0	-	0.0
Special Account (SA) for National Hospital	59.4	-	59.4
SA for Lending Urban Development Funds	40.0	-	40.0
SA for National Forest Service	82.4	-	82.4
[Government Financial Institutions]			
Government Housing Loan Corporation	0.4	0.2	-0.2
National Life Finance Corporation	2.9	-1.7	-1.6
Japan Finance Corporation for Small Business	5.3	2.1	2.0
Agriculture, Forestry and Fisheries Finance Corporation	7.5	6.2	6.1
Okinawa Development Finance Corporation	3.6	2.8	0.1
Development Bank of Japan	10.7	8.8	8.1
Japan Bank for International Cooperation	34.5	32.5	30.4
[Special Public Corporations]			
Urban Development Corporation	3.7	2.4	2.4
Pension Welfare Service Public Corporation	-3.0	-2.3	-2.3
Employment & Human Resources Development Organization of Japan	67.6	63.9	63.9
Japan Environment Corporation	1.6	-4.0	-3.7
Teito Rapid Transit Authority	8.3	-	8.3
Japan Regional Development Corporation	19.9	18.0	17.9
Japan Sewage Works Agency	-19.3	-2.3	-2.3
Social Welfare and Medical Service Corporation	0.4	9.6	9.6
Labor Welfare Corporation	85.4	62.3	58.4
Promotion and Mutual Aid Corporation for Private Schools of Japan	7.5	79.0	78.9
Japan Scholarship Foundation	0.6	-3.3	-3.2
Japan Small and Medium Enterprise Corporation	11.8	11.9	11.7
Japan Green Resources Corporation	44.5	44.5	44.5

(Continued to the next page)

Table 4. (Continued)

Agency	Original Balance Sheet	Administ. Cost Statement	Adjusted Capital Ratio
Japan Highway Public Corporation	5.1	18.2	18.2
Metropolitan Expressway Public Corporation	8.8	16.9	16.9
Hanshin Expressway Public Corporation	9.7	4.7	4.7
Honshu-Shikoku Bridge Authority	-5.8	-17.3	-17.3
Japan Railway Construction Public Corporation	4.1	-6.3	-6.3
New Tokyo International Airport Authority	32.1	32.2	32.2
Corporation for Advanced Transport & Technology	12.4	12.3	12.3
Water Resources Development Public Corporation	1.1	0.9	0.9
Metal Mining Agency of Japan	36.2	34.2	34.1
Japan National Oil Corporation	34.1	36.6	35.7
[Special Firms]			
Shoko Chukin Bank	4.3	-	3.7
East Japan Railway Company	13.1	-	13.1
Central Japan Railway Company	10.7	-	10.7
West Japan Railway Company	16.7	-	16.7
Japan Fright Railway Company	13.5	-	13.5
Electric Power Development Company	5.5	-	5.5

Notes: The capital ratios are calculated by the authors based on the data published in Ministry of Finance. *Zaisei Kin'yu Tokei Geppo (Ministry of Finance Statistics Monthly).* July, 2001, and the administrative cost statement of each agency.

Table 5. Bad Loans of FILP Agencies (March 2001)

Agency	Bad Loans (¥ bill.)	As % of Total Loans	Loan Loss Reserves (¥ bill.)	Under-reservation (¥ bill.)
[Government Financial Institutions]				
Government Housing Loan Corporation	1,397.8	1.8	41.1	1,356.7
National Life Finance Corporation	940.3	8.7	439.4	500.9
Japan Finance Corporation for Small Business	432.7	5.7	253.4	179.3
Agriculture, Forestry & Fisheries Fin. Corp.	193.6	5.1	44.1	149.5
Okinawa Development Finance Corporation	156.1	9.2	21.6	134.5
Development Bank of Japan	616.2	3.5	342.9	273.3
Japan Bank for International Cooperation	809.2	3.7	528.0	281.2
[Special Public Corporations]				
Urban Development Corporation	43.6	2.2	3.3	40.3
Pension Welfare Service Public Corporation	44.8	0.5	15.2	29.6
Employment & Human Resources Development Organization of Japan	17.0	2.6	6.9	10.1
Japan Environment Corporation	22.8*	6.2	33.0	-10.2
Japan Regional Development Corporation	10.5*	9.0	5.3	5.3
Social Welfare and Medical Service Corp.	21.8	0.8	5.7	16.2
Labor Welfare Corporation	2.3	3.0	36.4	-34.1
Promotion and Mutual Aid Corporation for Private Schools of Japan	7.8	0.9	2.5	5.4
Japan Scholarship Foundation	72.2	3.0	62.5	9.7
Japan Small and Medium Enterprise Corp.	131.9*	8.1	156.4	-24.5
Japan Green Resources Corporation	0.5	23.8	0.4	0.1
Japan Railway Construction Public Corp.	0.9	0.05	0.9	0
Corp. for Advanced Transport & Technology	11.5	3.9	4.8	6.7
Metal Mining Agency of Japan	1.7	9.4	0.2	1.5
Japan National Oil Corporation	120.2	43.9	20.0	100.2
[Special Firms]				
Shoko Chukin Bank	533.9	4.9	464.6	69.3
Total	5,589.3			3,169.8 (3,101.0)

Notes: The FILP agencies that are not listed in this table do not have any loans to other corporations or do not disclose non-performing loans. For the government financial institutions and Shoko Chukin Bank, the figures in the column "bad loans" are the amounts of the risk management loans. The SPCs are not required to disclose the risk management loans. The figures for those corporations show the amounts of past-due loans or loans for bankrupt entities that they report with their balance sheets. The administrative cost statements of Japan Environment Corporation, Japan Regional Development Corporation, and Japan Small and Medium Enterprise Corporation do not have any reference to non-performing loans. The figures in the table for these corporations (noted by *) are taken from their original financial statement.

Sources: *Tokushu Hôjin Sôran 2001*. Web sites for various special public corporations.

Table 6. Reevaluation of Business Assets held by FILP Agencies (March 2001)

Unit: ¥ billion (unless otherwise noted)

Agency	Before Reevaluation		After Re-evaluation	Over-valuation
	Original	Admin. Cost Stat.		
Urban Development Corporation	16,959	16,667	14,169	17.6%
Japan Environment Corporation	257	252	87	190.0%
Teito Rapid Transit Authority	1,232	-	1,189	3.7%
Japan Sewage Works Agency	151	162	125	29.6%
Japan Highway Public Corporation	38,532	32,808	27,505	19.3%
Metropolitan Expressway Public Corporation	6,754	5,827	4,863	19.8%
Hanshin Expressway Public Corporation	4,790	3,954	3,400	16.3%
Honshu-Shikoku Bridge Authority	3,946	3,539	2,762	28.1%
Japan Railway Construction Public Corp.	5,362	5,335	2,782	91.8%
New Tokyo International Airport Authority	824	825	606	36.1%
Water Resources Development Public Corp.	3,638	3,638	2,717	33.9%
Electric Power Development Company	2,214	-	2,045	8.3%

Notes: The "Original" column shows the figures reported in the original balance sheets. The "Admin. Cost Stat." shows the figures reported in the administrative cost statements. The "Overvaluation" is the difference between the amount reported in the administrative cost statement and the amount after the reevaluation in proportion to the amount after reevaluation. For Teito Rapid Transit Authority and Electric Power Development Company, which are not required to publish administrative cost statements, the amounts reported in the original balance sheets were used to calculate the extent of overvaluation.

Source: Authors' calculation based on the data published in Ministry of Finance *Zaisei Kin'yû Tôkei Geppo (Ministry of Finance Statistics Monthly)*, various issues, and the administrative cost statement of each agency.

Table 7. Net Reserves After Adjustments (March 2001)

Unit: ¥ Billion

Institution	(1) Adjusted Capital	(2) Under-reserved Bad Loans	(3) Over-valuation of Assets	(4) Net Capital (1)-(2)-(3)
[Government Financial Institutions]				
Government Housing Loan Corporation	-188.8	1,356.7		-1,545.5
National Life Finance Corporation	-180.1	500.9		-681.0
Japan Finance Corp. for Small Business	155.2	179.3		-24.1
Agriculture, Forestry & Fisheries Finance	244.8	149.5		95.3
Okinawa Development Finance Corp.	1.2	134.5		-133.3
Development Bank of Japan	1,511.7	273.3		1,238.4
Japan Bank for International Cooperation	6,889.5	281.2		6,608.3
[Special Public Corporations]				
Urban Development Corporation	417.4	40.3	2,498	-2,120.9
Pension Welfare Service Public Corp.	-819.8	29.6		-849.4
Employment & Human Resources Corp.	1,508.9	10.1		1,498.8
Japan Environment Corporation	-15.8	-	165	-180.8
Teito Rapid Transit Authority	107.7		43	64.7
Japan Regional Development Corporation	134.8	5.3		129.5
Japan Sewage Works Agency	-7.4		37	-44.4
Social Welfare and Medical Service Corp.	297.8	16.2		281.6
Prom'n & Mutual Aid for Private Schools	3,315.2	5.4		3,309.8
Japan Scholarship Foundation	-77.8	9.7		-87.5
Japan Green Resources Corporation	686.1	0.1		686.0
Japan Highway Public Corporation	6,109.1		5,303	806.1
Metropolitan Expressway Public Corp.	994.8		964	30.8
Hanshin Expressway Public Corporation	187.1		554	-366.9
Honshu-Shikoku Bridge Authority	-623.0		777	-1,400.0
Japan Railway Construction Public Corp.	-645.8	0.0	2,553	-3,198.8
New Tokyo Int'l Airport Authority	282.9		219	63.9
Corp. for Advanced Transport & Tech.	962.8	6.7		956.1
Water Resources Development Corp.	42.3		921	-878.7
Metal Mining Agency of Japan	25.5	1.5		24.0
Japan National Oil Corporation	1,477.9	100.2		1,377.7
[Special Firms]				
Shoko Chukin Bank	539.2	69.3		469.9
Electric Power Development Company	130.6		169	-38.4
Total		3,169.8	14,203	
Sum of negative capitals	-2,558.5			-11,549.7

Source: See Tables 5 and 6.

Table 8. Public Funds that Have Been Lost Already (End of March 2001)

Unit: ¥ Billion

Agency	Government Contribution (% of total capital)	Adjusted Net Capital	Losses for the Gov't
[Government Financial Institutions]			
Government Housing Loan Corporation	166.2 (100)	- 1,545.5	166.2
National Life Finance Corporation	321.9 (100)	-681.0	321.9
Japan Finance Corporation for Small Business	410.9 (100)	-24.1	410.9
Agriculture, Forestry and Fisheries Finance Corp.	311.1 (100)	95.3	215.8
Okinawa Development Finance Corporation	63.2 (100)	-133.3	63.2
Development Bank of Japan	1,039.4 (100)	1,238.4	0.0
Japan Bank for International Cooperation	6,986.2 (100)	6,608.3	377.9
[Special Public Corporations]			
Urban Development Corporation	683.0 (99)	-2,120.9	683.0
Pension Welfare Service Public Corporation	1,075.4 (100)	-849.4	1,075.4
Employment & Human Resources Development Org	2,118.4 (100)	1,498.8	619.6
Japan Environment Corporation	15.6 (79)	-68.8	15.6
Teito Rapid Transit Authority	31.0 (53)	64.7	0.0
Japan Regional Development Corporation	135.8 (100)	129.5	6.3
Japan Sewage Works Agency	1.5 (55)	-44.4	1.5
Social Welfare and Medical Service Corporation	292.6 (100)	281.6	11.0
Labor Welfare Corporation	723.1 (100)	351.2	371.9
Promotion & Mutual Aid Corp. for Private Schools	48.7 (100)	3,309.8	0.0
Japan Scholarship Foundation	3.7 (100)	-87.5	3.7
Japan Small and Medium Enterprise Corporation	1,257.7 (100)	1,148.8	108.9
Japan Green Resources Corporation	675.9 (100)	686.0	0.0
Japan Highway Public Corporation	1,980.1 (100)	806.1	1,174.0
Metropolitan Expressway Public Corporation	298.5 (50)	30.8	283.1
Hanshin Expressway Public Corporation	235.1 (50)	-366.9	235.1
Honshu-Shikoku Bridge Authority	516.9 (68)	-1,400.0	516.9
Japan Railway Construction Public Corporation	64.2 (100)	-1,813.8	64.2
New Tokyo International Airport Authority	284.7 (100)	63.9	220.8
Corporation for Advanced Transport & Technology	20.8 (84)	956.1	0.0
Water Resources Development Public Corporation	2.4 (100)	-878.7	2.4
Metal Mining Agency of Japan	23.7 (100)	24.0	0.0
Japan National Oil Corporation	1,636.8 (100)	1,377.7	259.1
[Special Firms]			
Shoko Chukin Bank	394.1 (80)	469.9	18.2
Electric Power Development Company	47.1 (67)	-38.4	47.1
Total	21,865.6		7,273.2

Notes: There are no direct government contributions to East JR, Central JR, West JR, and Japan Fright Railway.

Table 9. Expected Insolvency of Local Governments (the end of March 2000)

Unit: ¥ Billion

	Prefectures	Cities and Wards	Towns and Villages	Total	TFB Loans
Number of observations	47	694	2,564		
Total debt outstanding	68,240	41,383	10,700	120,323	53,418
Expected amount of default					
Scenario 1	65,605	25,211	5,320	96,135	36,896
Scenario 2	11,390	3,274	764	15,427	5,620
Scenario 3	62,970	21,327	4,681	88,979	33,760
Scenario 4	50,456	20,956	10,298	81,710	36,879
Scenario 5	44,366	7,398	9,636	61,400	29,225
Scenario 6	50,456	20,265	10,254	80,975	36,523

Source: Authors' calculation based on the data in Doi and Mori (2001).

Notes: The "total debt outstanding" includes net liabilities other than local bonds such as …. We calculate the difference between the total debt and the debt capacity that is defined to be the present discount value of the expected level of primary surplus. The "expected amount of default" shows the sum of the difference over local governments under each scenario. The last column shows the expected default of the FILP loans when we assume the seniority of the FILP loans are the same as the other liabilities. The discount rate is assumed to be 4%.
In Scenario 1, the expected primary surplus is estimated as the average primary surplus for the fiscal 1997, 1998, and 1999. In Scenario 2, the expected primary surplus is assumed to be 20% higher than the average primary surplus for the fiscal 1997, 1998, and 1999. Scenario 3 assumes that the expected primary surplus starts out with the average primary surplus for the fiscal 1997, 1998, and 1999, but grows at 2% per year. In Scenarios 4-6, the system of local allocation tax grants is assumed to be decentralized so that the local tax revenues go up in proportion to the average revenue in the fiscal 1997, 1998, and 1999 while the local allocation tax grants disappear. The assumption on the expected primary surplus in Scenario 4 (5, 6) is the same as that in Scenario 1 (2, 3 respectively).

Table 10. Bad FILP Loans

Total Net FILP Loans	¥ 270.8 trillion
Bad Loans	
Loans to insolvent public corporations	¥ 139.0 trillion
Loans to insolvent local governments	¥ 29.2 to 36.9 trillion
Former JR related debt	¥ 7.3 trillion
Total	¥ 175.5 to 183.2 trillion

Table 11. Uses and Sources of New Funds of the Postal Savings

Plan for Fiscal 2001 (April 2001-March 2002)

Unit: ¥ billion

Uses of Funds		Sources of Funds	
FILP Bonds	15,800	Matured TFB Deposits	32,297
Other JGB	1,200	Net Increase in Postal Deposits	-16,019
Local Bonds	550	Other Redemptions	8,223
Public Corporation Bonds	450		
Corporate Bonds	400		
Foreign Bonds	50		
Money Trust	750		
Loans to Local Governments	1,000		
Loans to Depositors	934		
Short-term Securities	3,367		
Total	24,501	Total	24,501

Source: “Heisei 13 nendo ni okeru Yûbin Chokin Shikin Unyô Keikaku” (Postal Savings Fund Investment Plan for Fiscal Heisei 13), December 24, 2000. (Available as http://www.yusei.go.jp/pressrelease/japanese/kawase/001224j301.html)

Plan for Fiscal 2002 (April 2002-March 2003)

Unit: ¥ billion

Uses of Funds		Sources of Funds	
FILP Bonds	13,600	Matured TFB Deposits	23,723
Other JGB	7,950	Net Increase in Postal Deposits	-3,848
Local Bonds	550	Other Redemptions	15,393
Public Corporation Bonds	450		
Corporate Bonds	400		
Foreign Bonds	50		
Money Trust	2,350		
Loans to Local Governments	980		
Loans to Depositors	713		
Short-term Securities	8,224		
Total	35,267	Total	35,267

Source: “Heisei 14 nendo ni okeru Yûbin Chokin Shikin Unyô Keikaku” (Postal Savings Fund Investment Plan for Fiscal Heisei 14), December 24, 2001. (Available as http://www.yusei.go.jp/pressrelease/japanese/kawase/011224j301.html)

Table 12. Use of FILP Agency Bonds

Unit: ¥ Billion

	Fiscal 2001	Fiscal 2002
New FILP Loans	22,759	17,419
New Issues of FILP Agency Bonds	1,006	2,487
Proportion of FILP Agency Bonds to FILP Loans	4.4%	14.3%

Notes: New FILP loans in this table does not include those for the central government and local governments.
Source: "Heisei 14 nendo Zaisei Tôyûshi Keikaku" (Fiscal 2002 FILP Plan) (available at http://www.mof.go.jp/seifuan14/zt004.pdf)

Table 13. Ratings of FILP Agency Bonds (February 2002)

	R&I	Moody's	S&P
National Life Finance Corporation	AA+		
Japan Finance Corporation for Small Business	AA+	Aa3	
Agriculture, Forestry and Fisheries Finance Corporation	AA		
Development Bank of Japan	AAA	Aa3	AA
Japan Bank for International Cooperation	AAA	Aa3	AA
Urban Development Corporation	A+		
Social Welfare and Medical Service Corporation	AA		
Promotion & Mutual Aid Corp. for Private Schools	AA		
Japan Scholarship Foundation	AA-		
Japan Highway Public Corporation		Aa3	AA-
Metropolitan Expressway Public Corporation	AA		
Hanshin Expressway Public Corporation		Aa3	
Japan Railway Construction Public Corporation	AA		
New Tokyo International Airport Authority	AA-		
Corporation for Advanced Transport and Technology	AA-		
Water Resources Development Public Corporation	AA		
Japanese Government Bonds	AAA	Aa3	AA

Sources: Moody's Japan (http://www.moodys.co.jp), Standard & Poor's (http://www.standardpoors.com/japan), Rating and Investment Information (R&I) (http://www.r-i.co.jp)

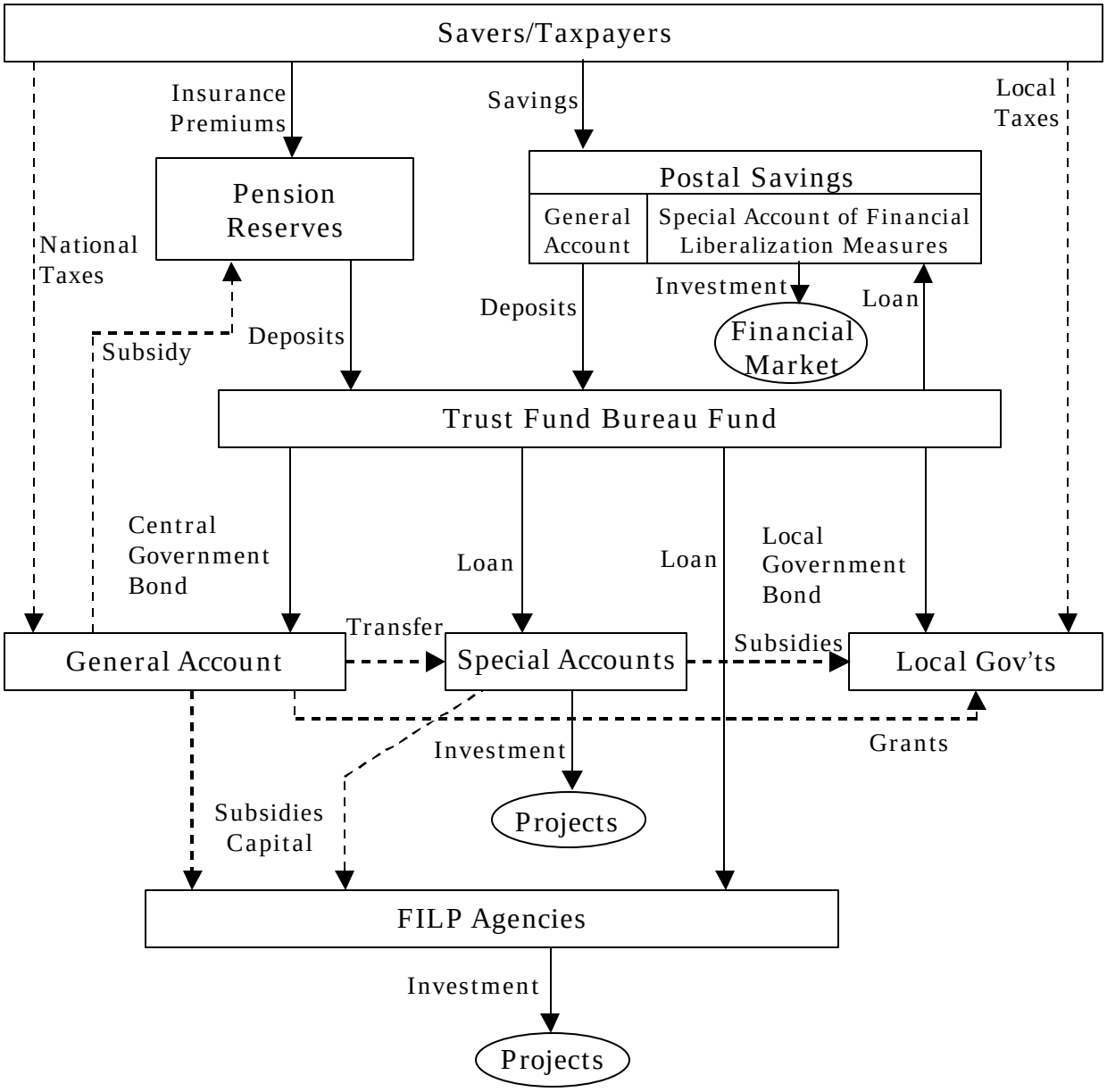
Table 14. Secondary Market Yield Spreads on FILP Agency Bonds

Bond (Date of Maturity)	Date				
	2/22/ 2002	2/1/ 2002	1/4/ 2002	12/3/ 2001	11/1/ 2001
Development Bank of Japan 1 (9/20/06)	0.127	0.118	0.122	0.157	0.133
New Tokyo Int'l Airport Authority 1 (9/22/11)	0.358	0.329	0.317	0.306	0.316
Japan Bank for International Cooperation 1 (9/20/06)	0.097	0.081	0.095	0.083	0.101
Japan Bank for International Cooperation 2 (9/20/11)	0.109	0.109	0.104	0.098	0.103
Corp. for Adv'd Transport & Tech. 1 (12/20/05)	0.243	0.217	0.220	0.205	
Promotion Corp. for Private Schools 1 (11/21/11)	0.252	0.226	0.205	0.202	
Water Resource Development Corp. 1 (9/20/11)	0.224	0.200	0.203		
New Tokyo Int'l Airport Authority 2 (12/13/11)	0.358	0.337	0.325		
Japan Scholarship Foundation 1 (12/5/11)	0.277	0.258	0.244		
Japan Railway Construction Pub. Corp. 1 (12/20/11)	0.239	0.222	0.207		
Japan Highway Public Corporation 1 (3/20/07)	0.361				
Japan Highway Public Corporation 2 (12/20/11)	0.415				
Social Welfare & Medical Service Corp. 1 (2/18/05)	0.303				

Source: Japan Securities Dealers Association, *Kôshasai Kijun Kehai* (*Member Quotation of Bond Prices*) (http://www.jsda.or.jp).

Notes: The date at the top of each column shows the date when the quotations were published. The spread is the difference between the compound yields of the bond and a long-term JGB (Japanese Government Bonds) with a comparable maturity. When there are more than one JGBs with the same maturity, the yield was calculated as the simple average of their compound yields. When we cannot find any long-term JGB that matures within a month before or after the FILP agency bond matures.

Figure 1. Structure of the FILP (Before April 2001)



Postal Life Insurance Fund and Industrial Investment Special Account are not included in this figure, although they are also a part of the FILP plan. Postal life insurance fund receives the insurance premiums from the policyholders and makes loans to the FILP agencies and local governments according to the FILP plan. Industrial investment special account receives transfers from the general account and makes loans to the FILP agencies.

Figure 2. FILP Plan by Target Area (Fiscal 2001)

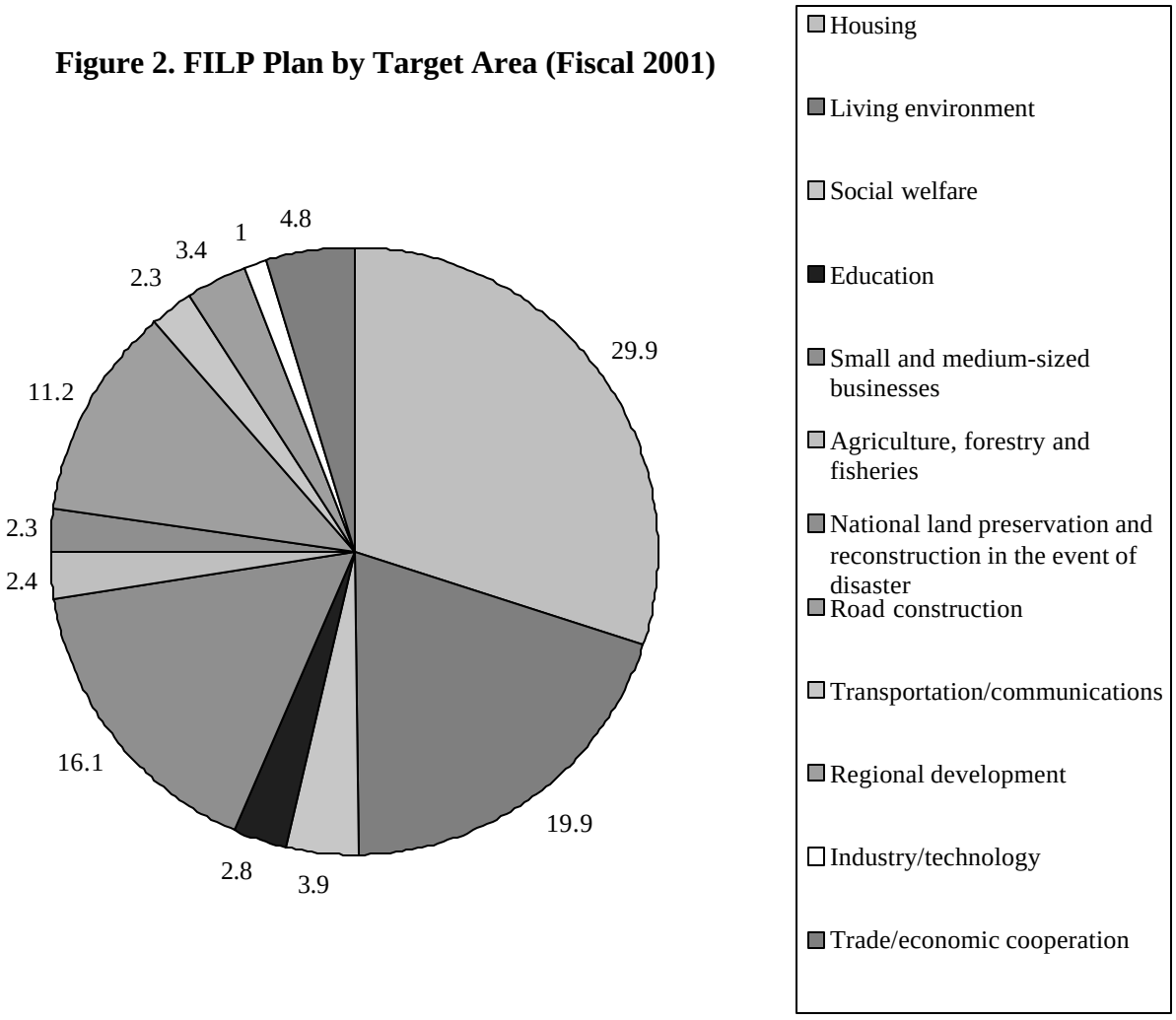
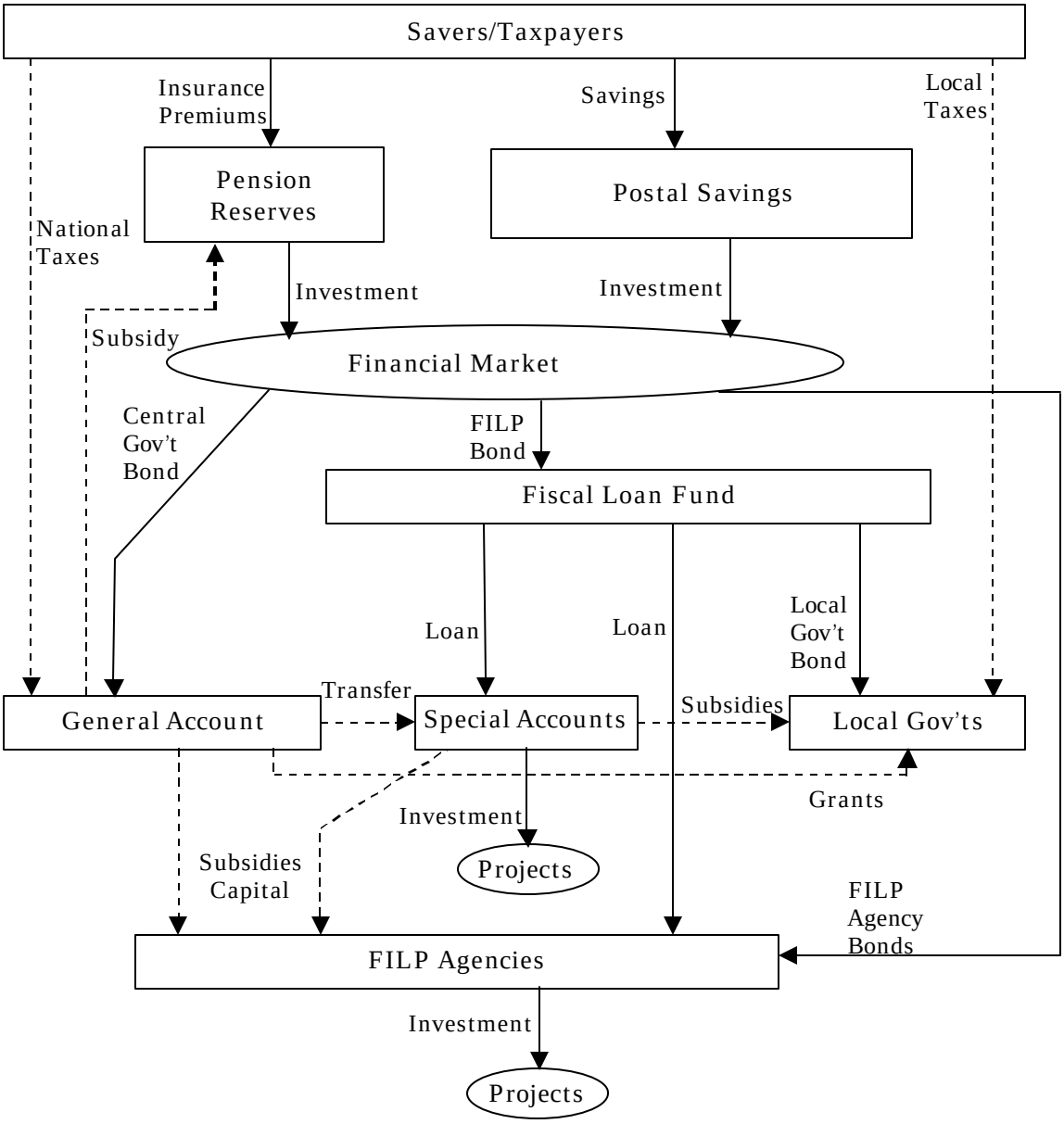


Figure 3. Structure of the New FILP (After April 2001)



Postal Life Insurance Fund and Industrial Investment Special Account are not included in this figure. The use of postal life insurance fund will go through a change similar to the use of postal savings fund. According to the reform plan, the postal life insurance fund will eventually invest all their funds in the financial market without any direct lending to the FILP agencies. The reform does not contain any significant changes for the role of the industrial investment special account.

Figure 4. Yields on FILP Agency Bonds and JGBs (%, February 21, 2002)

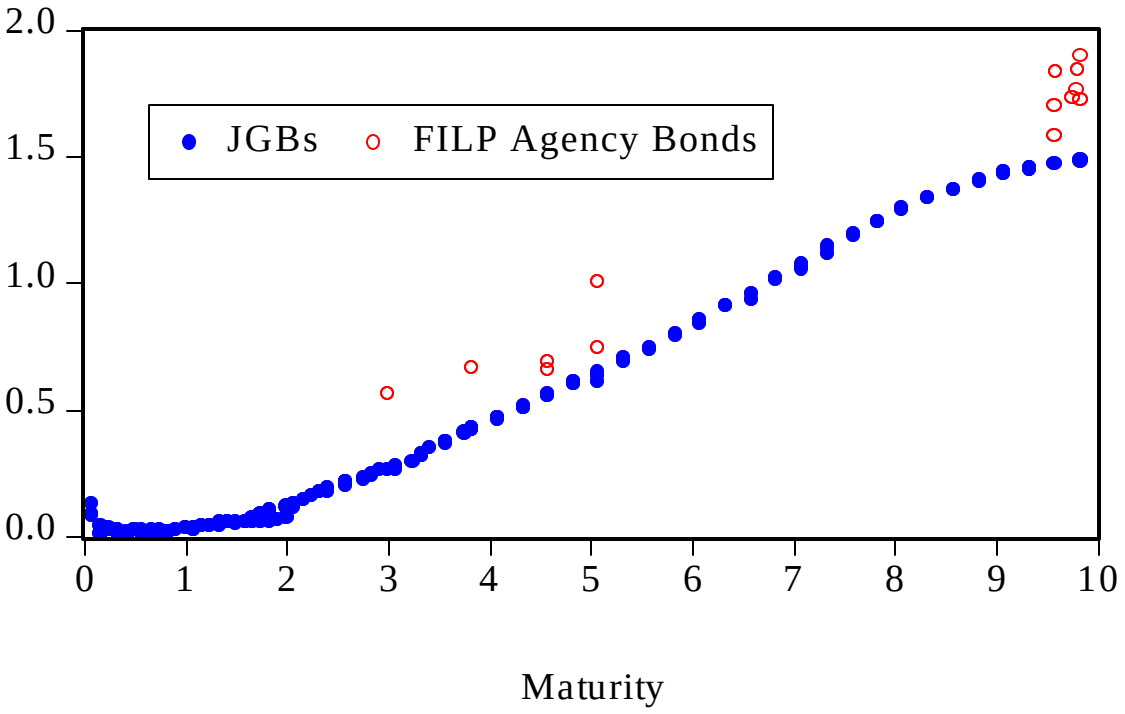
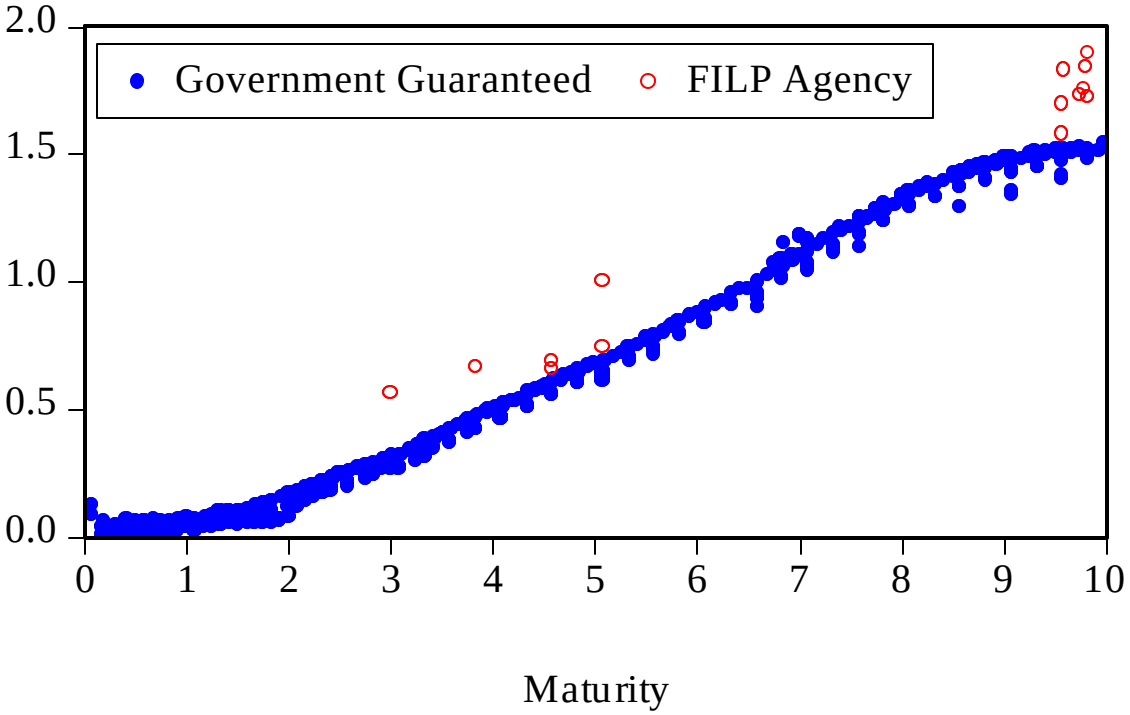


Figure 5. Yields of FILP Agency Bonds and Government Guaranteed Bonds (%, February 21, 2002)



Appendix 1. Balance sheets and income statements for FILP agencies based on the Corporate Accounting Principles

1. Government Housing Loan Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Cash and Deposits	1,039,747	Borrowings	74,853,314
Gensaki Purchased	6,097	Bonds	1,797,655
Loans	75,922,074	Other Liquid Liabilities	773,041
Other Financial Assets	312,688	Accrued Retirement Benefits	22,205
Fixed Assets	18,464	Other Accrued Benefits	533
Loan Loss Reserves	- 41,084		
Special Losses	341,400		
		Capital (100% government)	166,200
		Reserves	20,706
		Current Losses	- 34,268
Total	77,599,387	Total	77,599,387

Income statement (¥ million) (April 1, 2000 – March 31, 2001)

Income		Expenses	
Interest Income	2,684,695	Interest Expenses	3,057,719
Other Operating Income	28,711	Other Operating Expenses	14,016
Government Subsidies	396,800	General Administration	69,970
Other Current Income	5,685	Contribution to Loan Loss Reserves	8,711
Gains from Asset Sales	283	Other Current Expenses	16
		Losses from Asset Sales	9
Total Income	3,116,174	Total Expenses	3,150,441
Current Profit (Loss)	- 34,268		

2. National Life Finance Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Cash and Deposits	83,944	Borrowings	10,462,080
Loans	10,812,815	Bonds	100,000
Other Financial Assets	19,160	Other Liquid Liabilities	52,906
Fixed Assets	53,720	Accrued Retirement Benefits	93,458
Loan Loss Reserves	- 439,364	Other Accrued Benefits	1,958
		Capital (100% government)	501,999
		Cumulative Losses	- 53,115
		Current Losses	- 180,128
Total	10,530,275	Total	10,530,275

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Interest Income	279,657	Interest Expenses	219,511
Other Operating Income	174	Other Operating Expenses	4,440
Government Subsidies	50,973	General Administration	79,067
Other Current Income	679	Contribution to Loan Loss Reserves	81,172
Gains from Asset Sales	143	Other Current Expenses	422
		Losses from Asset Sales	129
Total Income	331,626	Total Expenses	384,741
Current Profit (Loss)	- 53,115		

3. Japan Finance Corporation for Small Business

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Cash and Deposits	68,633	Borrowings	3,308,795
Corporate Bonds	711	Bonds	3,901,796
Loans	7,618,508	Other Liabilities	62,010
Fixed Assets	20,934	Accrued Retirement Benefits	31,093
Other Assets	4,184	Other Accrued Liabilities	674
Loan Loss Reserves	- 253,405		
		Government Contribution	410,915
		Cumulative Losses	- 217,351
		Current Losses	- 38,365
Total	7,459,565	Total	7,459,565

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Interest Income	198,637	Interest Expenses	185,988
Government Subsidies	60,585	Increase in Loan Loss Reserves	76,337
Other Current Income	830	General Administration	31,417
		Other Current Expenses	4,758
Extraordinary Income	171	Extraordinary Losses	88
Total Income	260,223	Total Expenses	298,588
Current Profit (Loss)	- 38,365		

4. Agriculture, Forestry and Fisheries Finance Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Cash and Deposits	120,300	Borrowings	3,640,503
Other Liquid Assets	6,599	Accrued Retirement Benefits	18,584
Loans	3,825,309	Other Liabilities	61,305
Fixed Assets	12,158		
Other Assets	44,937		
Loan Loss Reserves	- 44,138		
		Capital (100% government)	311,137
		Cumulative Losses	- 72,358
		Current Profits	5,993
Total	3,965,166	Total	3,965,166

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Interest Income	133,763	Interest Expenses	163,687
Government Subsidies	72,709	General Administration	28,240
Other Current Income	233	Other Current Expenses	8,929
Extraordinary Income	155	Extraordinary Losses	10
Total Income	206,860	Total Expenses	200,866
Current Profit (Loss)	5,993		

5. Okinawa Development Finance Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Cash and Deposits	9,899	Borrowings	1,632,097
Gensaki Purchased	2,999	Bonds	13
Stock	1,783	Other Liabilities	11,603
Loans	1,689,166	Accrued Retirement Benefits	3,285
Other Financial Assets	5,573	Other Accrued Benefits	114
Fixed Assets	8,635	Guarantee and Acceptance	48,092
Counterpart to Guarantee & Acceptance	48,092		

Loan Loss Reserves	- 21,644		
		Capital (100% government)	63,192
		Cumulative Losses	- 13,591
		Current Losses	- 304
Total	1,744,503	Total	1,744,503

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Interest Income	59,148	Interest Expenses	57,257
Fee Income	393	Other Operating Expenses	802
Government Subsidies	5,591	General Administration	4,582
Other Current Income	52	Write-offs (Loans & Stock)	2,772
		Contribution to Loan Loss Reserves	31
		Other Current Expenses	21
		Losses from Asset Sales	23
Total Income	65,184	Total Expenses	65,488
Current Profit (Loss)	- 304		

6. Development Bank of Japan

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Cash and Deposits	30,036	Borrowings	14,951,287
Gensaki Purchased	97,370	Bonds	1,329,198
Securities	436,165	Other Liabilities	327,635
Loans	17,741,159	Guarantee & Acceptance	104,574
Other Financial Assets	239,107	Accrued Retirement Benefits	25,013
Fixed Assets	40,742		
Counterpart to Guarantee & Acceptance	104,574		
Deferred Assets	1,817		
Loan Loss Reserves	- 342,941		
Investment Loss Reserve	- 3,375		
		Capital (100% government)	1,039,386
		Reserves	953,186
		Current Losses	- 385,625
Total	18,344,655	Total	18,344,655

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Interest Income	667,722	Interest Expenses	583,648
Other Current Income	1,154	Other Operating Expenses	2,034
		General Administration	29,943
		Other Current Expenses	22,823
Extraordinary Income	2,074	Extraordinary Losses	9,057
		Losses Carried Forward	409,069
Total Income	670,950	Total Expenses	1,056,574
Current Profit (Loss)	- 385,625		

7. Japan Bank for International Cooperation

Balance sheet (¥ million) (March31, 2001)

Assets		Liabilities	
Cash and Deposits	390,588	Borrowings	12,814,913
Gensaki Purchased	105,419	Bonds	1,427,393
Securities	124,159	Other Liabilities	547,566
Loans	21,658,986	Guarantee & Acceptance	448,665
Other Financial Assets	365,220	Accrued Retirement Benefits	15,532

Fixed Assets	29,984		
Counterpart to Guarantee & Acceptance	448,665		
Loan Loss Reserves	- 527,999		
Investment Loss Reserve	- 2,762		
		Capital (100% government)	6,986,244
		Reserves	654,314
		Current Losses	- 302,367
Total	22,592,259	Total	22,592,259

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Interest Income	836,026	Interest Expenses	635,704
Other Current Income	7,424	Other Operating Expenses	9,920
		General Administration	26,125
		Other Current Expenses	37,963
Extraordinary Income	316	Extraordinary Losses	6,037
		Losses Carried Forward	430,383
Total Income	843,766	Total Expenses	1,146,132
Current Profit (Loss)	- 302,367		

8. Urban Development Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Housing Assets for Sales	6,343,095	Short-term Liabilities	2,182,026
Other Liquid Assets	329,000	Long-term Borrowing	11,072,986
Land	3,106,263	Long-term Bonds	3,298,445
Buildings	4,393,311	Other Fixed Liabilities	110,698
Construction in Progress	2,326,575		
Other Fixed Assets	498,868		
Intangible Assets	765		
Financial Investments	41,414		
Deferred Assets	6,171		
		Government Contribution	688,004
		Reserves	88,605
		Current Losses	- 395,302
Total	17,045,464	Total	17,045,464

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	1,088,806	Business Expenses	755,692
Government Subsidies	106,631	General Administration Cost	19,145
Other Current Income	244	Interest Expenses	433,713
		Other Current Expenses	3,440
Special Subsidies	124,844	Inventories Reevaluation Loss	373,941
Other Extraordinary Income	5,286	Other Extraordinary Expenses	135,182
Total Income	1,325,811	Total Expenses	1,721,113
Current Profit (Loss)	395,302		

9. Pension Welfare Service Public Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	174,200	Short-term Liabilities	4,054,525
Loans	9,164,172	Long-term Borrowing	32,166,943

Business Assets	125,692	Government Subsidies for Asset Purchase	5,208
Financial Assets	25,940,741	Accrued Retirement Benefits	1,341
Fixed Tangible Assets	510		
Intangible Assets	110		
Financial Investments	2,835		
		Government Contribution	1,075,411
		Reserves	442,826
		Current Losses	- 2,337,993
Total	35,408,262	Total	35,408,262

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	- 1,097,112	Business Expenses	452,420
Government Subsidies	64,592	General Administrative Cost	4,470
Reversal of Government Subsidies for Asset Purchase	921	Depreciation of Business Asset	4,263
Other Current Income	880	Interest Expenses	845,196
		Other Current Expenses	245
Reversal of Loan Loss Reserves	827	Loss from Asset Sales	1,492
		Loss from Asset Depletion	13
Total Income	- 1,029,892	Total Expenses	1,308,099
Current Profit (Loss)	- 2,337,993		

10. Employment and Human Resources Development Organization of Japan

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Short-term Loan Assets	650,927	Liquid Liabilities	247,786
Other Liquid Assets	120,683	Long-term Borrowing	49,519
Fixed Tangible Assets	1,564,133	Long-term Bonds	451,900
Intangible Assets	2,448	Other Fixed Liabilities	101,768
Financial Investments	21,018		
Deferred Assets	658	Government Contribution	2,119,272
		Reserves	- 564,213
		Current Losses	-46,165
Total	2,359,867	Total	2,359,867

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	102,664	Business Expenses	344,125
Government Subsidies	231,748	General Administrative Cost	33,257
Other Current Income	1,902	Increase in Reserves	1,222
		Other Current Expenses	4
Gain from Asset Sales	159	Loss from Asset Sales	561
		Loss from Asset Depletion	3,469
Total Income	336,473	Total Expenses	382,638
Current Profit (Loss)	- 46,165		

11. Japan Environment Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Accounts Receivable	202,673	Short-term Liabilities	53,779
Loans	130,364	Long-term Borrowing	343,689
Other Liquid Assets	45,422	Advance Received	7,522

Fixed Tangible Assets	140	Accrued Retirement Benefits	2,128
Intangible Assets	49	Government Subsidies for Asset Purchase	87
Financial Investments	13,197	Other Liabilities	468
		Government Contribution	15,600
		Private Contribution	4,189
		Reserves	19
		Cumulative Losses	- 42,064
		Current Profits	6,429
Total	391,846	Total	391,846

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	40,024	Business Expenses	34,676
Government Subsidies	17,892	General Administration	1,450
Reversal of Government Subsidies for Asset Purchase	12	Interest Expense	14,133
Non-Operating Income	67	Contribution to Loan Loss Reserves	1,312
Extraordinary Income	6		
Total Income	58,001	Total Expenses	51,572
Current Profit (Loss)	6,429		

13. Japan Regional Development Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	38,955	Short-term Liabilities	90,929
Business Assets (Land, etc.)	606,674	Long-term Borrowing	272,853
Business Assets (Loan, etc.)	99,574	Long-term Bonds	237,940
Fixed Tangible Assets	3,192	Accrued Retirement Expenses	7,800
Intangible Assets	19	Government Subsidies for Fixed Business Assets	3,699
Financial Investments	2,586	Government Subsidies for Financial Business Assets	1,622
Deferred Assets	407		
		Government Contribution	135,836
		Reserves	15,134
		Current Losses	- 14,405
Total	751,407	Total	751,407

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Loan Business Income	1,715	Business Expenses	29,907
Other Business Income	28,253	Interest Expenses for Loan Business	963
Government Subsidies	1,013	General Administration	5,070
Reversal of Government Subsidies for Assets	71	Depreciation of Business Assets	306
Other Current Income	3,420	Loan Losses	554
		Contribution to Loan Loss Reserves	146
Special Government Subsidies	12,195	Interest Expense & Other	7,334
Other Extraordinary Income	446	Extraordinary Losses	17,238
Total Income	47,113	Total Expenses	61,518
Current Profit (Loss)	- 14,405		

14. Japan Sewage Works Agency

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Accounts Receivable	78,201	Accounts Payable	134,584
Other Liquid Assets	83,592	Other Short-term Liabilities	2,525
Fixed Assets	162,040	Long-term Borrowing	118,382
Intangible Assets	1,202	Government Subsidies for Assets Purchase	72,396
Financial Investments	1,152	Accrued Retirement Benefits	5,607
		Other Fixed Liabilities	63
		Government Contribution	2,789
		Reserves	8,074
		Cumulative Losses	- 16,226
		Current Losses	- 2,007
Total	326,187	Total	326,187

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	336,492	Business Expenses	320,263
Government Subsidies	1,267	General Administration	18,502
Reversal of Government Subsidies for Asset Purchase	3,878	Contribution to Reserves	35
Non-Operating Income	629	Non-Operating Expenses	5,473
Total Income	342,268	Total Expenses	344,275
Current Profit (Loss)	- 2,007		

15. Social Welfare and Medical Service Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	66,457	Liquid Liabilities	14,742
Loan Assets	2,740,816	Long-term Borrowing	2,699,013
Other Fixed Assets	2,622	Long-term Bonds	40,020
Financial Investments	280,774	Other Fixed Liabilities	39,096
Deferred Assets	36		
		Government Contribution	292,550
		Reserves	13,389
		Current Losses	- 8,103
Total	3,090,708	Total	3,090,708

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Loan Interest Income	72,565	Loan Business Expenses	86,367
Income from Retirement Insurance Business	37,762	Retirement Insurance Business Expenses	59,998
Income from Disability Insurance Business	22,192	Disability Insurance Business Expenses	19,998
Government Subsidies	34,765	Other Business Expenses	4,616
Transfer from Support Insurance Disbursement Account	7,947	General Administrative Cost	6,569
Other income	5,709	Increase in Reserves	1,350
		Transfer to Support Insurance Disbursement Account	10,141
Total Income	180,940	Total Expenses	189,043
Current Profit (Loss)	- 8,103		

16. Labor Welfare Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Accounts Receivable	41,959	Short-term Liabilities	54,553
Other Liquid Assets	122,173	Long-term Borrowing	22,200
Buildings	300,415	Accrued Retirement Benefits	134,186
Other Fixed Assets	98,863	Government Subsidies for Assets Purchase	2,011
Intangible Assets	242		
Financial Investments	475	Government Contribution	723,064
		Reserves	727
		Cumulative Losses	- 342,949
		Current Losses	- 29,664
Total	564,128	Total	564,128

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	277,821	Business Expenses	312,987
Government Subsidies	28,851	General Administration	4,905
Reversal of Government Subsidies for Asset Purchase	170	Contribution to Loan Loss Reserves	14,946
Non-Operating Income	3,128	Non-Operating Expenses	767
Extraordinary Income	49	Extraordinary Losses	6,077
Total Income	310,019	Total Expenses	339,682
Current Profit (Loss)	- 29,664		

17. Promotion and Mutual Aid Corporation for Private Schools of Japan

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	185,653	Member Deposits	524,138
Loans	726,606	Other Short-term Liabilities	66,486
Business Assets	721,478	Long-term Borrowing	272,285
Fixed Assets	3,633	Reserves for Deposits	8,542
Securities	1,494,565	Accrued Retirement Benefits	10,739
Other Financial Investments	1,066,013	Other Liabilities	544
		Government Contribution	48,719
		Reserves	3,178,032
		Current Profits	88,462
Total	4,197,950	Total	4,197,950

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Government Subsidies	302,651	Subsidies for Members	302,651
Income from Loan Business	27,505	Business Expenses	517,181
Other Business Income	595,412	General Administration	15,756
Non-Operating Income	955	Contribution to Reserves	497
		Depreciation of Business Asset	1,906
		Non-Operating Expenses	132
Extraordinary Income	116	Extraordinary Losses	55
Total Income	926,639	Total Expenses	838,178
Current Profit (Loss)	88,462		

18. Japan Scholarship Foundation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	18,163	Short-term Liabilities	2,887
Loans	2,366,337	Long-term Borrowing	2,458,459

Fixed Assets	737	Accrued Retirement Benefits	7,693
Intangible Assets	832	Government Subsidies for Assets Purchase	546
Financial Investments	5,752		
		Government Contribution	3,701
		Reserves	298
		Cumulative Losses	- 72,546
		Current Losses	- 9,218
Total	2,391,821	Total	2,391,821

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	8,116	Business Expenses	18,992
Government Subsidies	18,032	General Administration	9,652
Increase in Expected Repayment Exemption	17,699	Loan Losses	34
Reversal of Government Subsidies for Asset Purchase	33	Contribution to Loan Loss Reserves	9,284
Non-Operating Income	1,266	Repayment Exemption	16,440
Total Income	45,184	Total Expenses	54,402
Current Profit (Loss)	- 9,218		

19. Japan Small and Medium Enterprise Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	3,454,520	Short-term Liabilities	102,534
Land	6,620	Long-term Borrowing	13,948
Buildings	25,104	Long-term Bonds	122,790
Other Fixed Assets	2,902	Reserves for Insurance Business	7,755,282
Intangible Assets	1,740	Other Fixed Liabilities	539,754
Financial Securities	3,727,959		
Loans	1,470,266		
Other Financial Investments	993,922		
Deferred Assets	102		
		Government Contribution	1,257,696
		Private Contribution	1,404
		Reserves	354,016
		Current Losses	- 464,288
Total	9,683,136	Total	9,683,136

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Income from Loan Business	18,619	Expenses for Loan Business	9,251
Income form Insurance Business	763,215	Expenses for Insurance Business	522,111
Government Subsidies	22,417	Other Business Expenses	16,157
Reversal of Reserves	3,218	General Administration	18,941
Interest Income	6,737	Increase in Reserves	260,170
Other Current Income	2,678	Money Trust Reevaluation Loss	210,399
		Other Non-Operating Loss	717
		Depletion of Fixed Assets	49
		Accumulated Losses	243,377
Total Income	816,884	Total Expenses	1,281,172
Current Profit (Loss)	- 464,288		

20. Japan Green Resources Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Accounts Receivable	150,649	Advances Received	355,939
Other Liquid Assets	32,919	Other Short-term Liabilities	8,356
Business Assets	1,351,527	Long-term Borrowing	477,318
Fixed Tangible Assets	2,029	Accrued Retirement Benefits	14,659
Intangible Assets	90	Account Payable	30
Financial Investments	5,219		
		Government Contribution	675,888
		Reserves	10,245
Total	1,542,435	Total	1,542,435

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	36,335	Business Expenses	90,578
Government Subsidies	55,941	General Administration	1,017
Non-Operating Income	401	Interest Expense	1,007
		Other Current Expenses	162
Extraordinary Income	40	Extraordinary Expenses	17
Total Income	92,717	Total Expenses	92,781
Current Profit (Loss)	-65		

21. Japan Highway Public Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	148,834	Short-term Liabilities	382,003
Business Assets	32,807,987	Long-term Borrowing	4,648,924
Other Fixed Assets	412,360	Long-term Bonds	21,015,179
Intangible Assets	377	Accrued Retirement Benefits	102,227
Financial Investments	74,414	Repair Reserves	1,890
Deferred Assets	76,081	Government Subsidies for Assets	116,016
		Accounts Payable	1,143,920
		Other Liabilities	779
		Government Contribution	1,980,095
		Reserves	4,129,019
Total	33,520,052	Total	33,520,052

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	2,109,850	Business Expenses	331,004
Government Subsidies	100,781	General Administration	98,459
Reversal of Government Subsidies for Assets	2,174	Contribution to Reserves	538
Non-operating Income	8,271	Depreciation of Business Assets	457,702
Other Current Income	236	Interest Expenses	808,460
		Business Assets Depletion	96,727
		Other Expenses	5,192
Total Income	2,221,312	Total Expenses	1,798,082
Current Profit (Loss)	423,230		

22. Metropolitan Expressway Public Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Accounts Receivable	7,218	Advances Received	10,009
Other Liquid Assets	16,160	Other Short-term Liabilities	38,471

Business Assets	3,769,042	Long-term Borrowing	1,141,405
Business Assets Construction in Progress	2,057,884	Long-term Bonds	3,619,848
Other Fixed Assets	21,518	Other Fixed Liabilities	80,227
Intangible Assets	31		
Financial Investments	852		
Deferred Assets	12,092		
		Government Contribution	596,994
		Reserves	397,842
Total	5,884,795	Total	5,884,795

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	263,639	Business Expenses	70,397
Non-Operating Income	346	General Administration	10,463
		Contribution to Loan Loss Reserves	10
		Depreciation of Business Assets	68,903
		Interest Expenses	111,111
		Business Assets Depletion	10,308
		Other Expenses	923
Total Income	263,985	Total Expenses	272,115
Current Profit (Loss)	- 8,130		

23. Hanshin Expressway Public Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	30,378	Account Payable	24,151
Business Assets	3,337,957	Accrued Expenses	25,297
Business Assets Construction in Progress	616,061	Other Short-term Liabilities	4,390
Other Fixed Assets	14,625	Long-term Borrowing	775,869
Intangible Assets	223	Long-term Bonds	2,868,250
Financial Investments	405	Government Subsidies for Asset Purchase	106,282
Deferred Assets	4,477	Accrued Retirement Benefits	12,758
		Government Contribution	470,200
		Cumulative Losses	- 246,172
		Current Losses	- 36,898
Total	4,004,126	Total	4,004,126

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	188,920	Business Expenses	42,671
Reversal of Government Subsidies for Asset Purchase	2,157	General Administration	10,234
Non-operating Income	71	Contribution to Loan Loss Reserves	11
		Business Assets Depreciation	54,672
		Business Assets Depletion	7,740
		Interest Expenses	112,650
		Other Expenses	68
Total Income	191,148	Total Expenses	228,046
Current Profit (Loss)	- 36,898		

24. Honshu-Shikoku Bridge Authority

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Accounts Receivable	2,529	Accrued Expenses	20,638
Other Liquid Assets	5,547	Other Short-term Liabilities	2,921
Business Assets	3,482,705	Long-term Borrowing	439,385
Business Assets Construction in Progress	55,592	Long-term Bonds	3,406,098
Other Fixed Assets	24,756	Government Subsidies for Railroad Construction	331,324
Intangible Assets	15	Other Fixed Liabilities	20,044
Financial Investments	13,178		
Deferred Assets	13,128		
		Government Contribution	765,616
		Cumulative Losses	- 1,257,790
		Current Losses	- 622,961
Total	3,597,449	Total	3,597,449

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	88,841	Business Expenses	15,403
Reversal of Government Subsidies for Railroad Const.	10,755	General Administration	11,603
Non-operating Income	359	Contribution to Loan Loss Reserves	459
		Business Assets Depreciation	64,121
		Interest Expenses	137,685
		Other Expenses	1,369
Total Income	99,955	Total Expenses	230,641
Current Profit (Loss)	- 130,686		

25. Japan Railway Construction Public Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Securities	2,069,878	Short-term Liabilities	575,997
Other Liquid Assets	755,963	Long-term Borrowing	1,169,470
Business Assets	3,949,799	Long-term Bonds	1,783,258
Other Fixed Assets	11,831	Accrued Retirement Benefits	4,523,016
Intangible Assets	34	Government Subsidies for Asset Purchase	1,919,374
Loans	1,943,759	Other Fixed Liabilities	393,123
Long-term Account Receivable	1,337,228		
Other Financial Investments	10,109		
		Government Contribution	64,180
		Reserves	185,076
		Cumulative Losses	- 2,053,489
		Current Profits	309,744
Total	10,078,603	Total	10,078,603

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	367,832	Business Expenses	180,832
Government Subsidies	65,953	General Administration	18,272
Reversal of Government Subsidies for Asset Purchase	26,420	Business Assets Depreciation	54,482
Interest & Dividend Income	178,395	Interest Expenses	192,029
Other Current Income	1,774	Other Current Expenses	181

Extraordinary Income	115,214	Extraordinary Losses	48
Total Income	755,588	Total Expenses	445,844
Current Profit (Loss)	309,744		

26. New Tokyo International Airport Authority

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	37,271	Short-term Liabilities	164,051
Business Fixed Assets	824,633	Long-term Borrowing	61,945
Other Fixed Assets	3,221	Long-term Bonds	328,207
Intangible Assets	45	Long-term Deposits	19,827
Financial Investments	5,419	Accrued Retirement Benefits	14,378
Deferred Assets	556	Advances Received	3,554
		Government Contribution	284,656
		Reserves	769
		Current Losses	- 6,241
Total	871,145	Total	871,145

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	147,049	Business Expenses	67,576
Non-Operating Income	278	General Administration	11,480
		Contribution to Loan Loss Reserves	3
		Depreciation of Business Asset	34,973
		Interest Expenses	22,313
		Other Current Expenses	16
Gains from Asset Sales	20	Losses from Asset Depletion	17,174
		Security Reevaluation Loss	54
Total Income	147,347	Total Expenses	153,589
Current Profit (Loss)	- 6,242		

27. Corporation for Advanced Transport and Technology

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	58,407	Short-term Liabilities	603,532
Business Assets	7,465,005	Long-term Borrowing	5,574,290
Loans	280,619	Long-term Bonds	670,170
Fixed Tangible Assets	328	Other Fixed Liabilities	1,738
Intangible Assets	34		
Financial Investments	7,113		
Deferred Assets	1,048		
		Government Contribution	19,761
		DBJ Contribution	1,000
		Private Contribution	2,811
		Reserves	965,062
		Current Losses	- 25,811
Total	7,812,553	Total	7,812,553

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	781,682	Business Expenses	598,943
Government Subsidies	215,372	General Administration Cost	2,530
Other Current Income	1,255	Interest Expenses	364,991
		Other Current Expenses	259
		Increase in Reserves	1,460

		Depreciation of Business Assets	53,281
		Extraordinary Losses	2,655
Total Income	998,309	Total Expenses	1,024,119
Current Profit (Loss)	- 25,810		

28. Water Resources Development Public Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	68,231	Short-term Liabilities	138,956
Business Fixed Assets	3,638,340	Long-term Borrowing	941,672
Other Fixed Assets	6,142	Long-term Bonds	340,660
Long-term Accounts Receivable	941,341	Long-term Advances Received	739,008
Other Financial Investments	24,738	Accrued Retirement Allowances	29,866
Deferred Assets	546	Other Reserves	800
		Government Subsidies for Business Assets Purchases	2,445,845
		Other Fixed Assets	236
		Government Contribution	2,392
		Reserves	35,247
		Current Profits	4,656
Total	4,679,339	Total	4,679,339

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	51,213	Business Expenses	50,634
Government Subsidies for Assets Purchases	46,128	Increase in Reserves	4,241
Other Current Income	56,588	Depreciation of Business Assets	46,128
		Interest Expenses	48,276
Extraordinary Income	504	Extraordinary Expenses	498
Total Income	154,433	Total Expenses	149,776
Current Profit (Loss)	4,657		

29. Metal Mining Agency of Japan

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	14,481	Short-term Liabilities	2,836
Business Fixed Assets	33,250	Long-term Borrowing	8,346
Business Financial Assets	16,681	Long-term Bonds	30,703
Other Fixed Assets	417	Investment Loss Reserves	1,314
Intangible Assets	20	Reserves for Pollution Liability	3,119
Financial Investments	8,909	Accrued Retirement Benefits	2,547
Deferred Assets	22	Advances Received	52
		Government Subsidies for Assets Purchase	130
		Government Contribution	23,738
		Reserves	3,947
		Cumulative Losses	- 1,627
		Current Losses	- 515
Total	74,590	Total	74,590

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income	Expenses

Financial Business Income	525	Business Expenses	8,813
Other Business Income	7,739	General Administration	3,308
Government Subsidies	5,203	Depreciation of Business Asset	241
Reversal of Government Subsidies for Assets Purchase	29	Interest Expenses	1,789
Non-Operating Income	186	Other Current Expenses	40
Extraordinary Income	42	Extraordinary Losses	48
Total Income	13,724	Total Expenses	14,239
Current Profit (Loss)	- 515		

30. Japan National Oil Corporation

Balance sheet (¥ million) (March 31, 2001)

Assets		Liabilities	
Liquid Assets	92,487	Short-term Liabilities	18,885
Business Fixed Assets	1,525,593	Long-term Borrowing	1,704,008
Other Fixed Assets	11,195	Long-term Bonds	517,500
Intangible Assets	13	Government Subsidies for Assets Purchase	2,904
Stock of Related Companies	589,405	Accrued Retirement Benefits	3,582
Loans to Related Companies	949,759	Other Accrued Benefits	152
Other Loans	189,964		
Long-term Accounts Receivable	69,727		
Other Financial Investments	31,994	Government Contribution	1,636,767
Deferred Assets	503	Cumulative Losses	- 423,158
Total	3,460,639	Total	3,460,639

Income statement (¥ million) (April 1, 2000– March 31, 2001)

Income		Expenses	
Business Income	35,671	Business Expenses	261,073
Government Subsidies	239,769	General Administration	5,358
Reversal of Government Subsidies for Assets Purchase	879	Increase in Loan & Investment Loss Reserves	52,758
Non-Operating Income	2,326	Investment Losses	34,958
		Other Non-Operating Losses	1,611
Extraordinary Income	12,245	Extraordinary Losses	8
Total Income	290,890	Total Expenses	355,766
Current Profit (Loss)	- 64,875		

Appendix 2. Reevaluation of business assets held by public corporations

This appendix documents our construction of the market value of business assets for each public corporation. We start out by dividing the amount of business assets (and the construction in progress) reported on the book into land (which does not depreciate) and other assets (which do depreciate). For each public corporation, we assume a certain proportion of the business assets and the construction in progress reported at the end of fiscal 1965 was in land. Similarly we assume a certain proportion of new investment in the business assets and the construction in progress each year has been in land. Some public corporations distinguish between land and the other business assets in their administrative cost statements. For such a case, we set the proportion of land business asset so that the ratio of the land to the other business assets as of the end of fiscal 2000 that we estimate is equal to the ratio of the land to the other business assets reported in the administrative cost statement. For other corporations, such as Japan Highway Public Corporation, we have not been able to find any information about the proportion of land in their assets. Thus, we picked a number that seems reasonable. Table A2.1 (second column) summarizes the assumptions for the proportion of land assets that we used for each public corporation.

Let A_t be the book value of all business assets at the beginning of period t, J_t be the book value of construction in progress at the beginning of period t, and D_t be the depreciation of business assets during the period t reported in the book. All of these are readily available in the financial statements that each public corporation publishes. Let α be the proportion of land in the all business assets. We estimate the investment in land during the period t as:

$$IL_t = \alpha\{(A_{t+1} + J_{t+1}) - (A_t + J_t)\} \quad \text{(A2.1)}$$

Similarly, the investment in the business assets other than land is estimated as:

$$IK_t = (1-\alpha)\{(A_{t+1} + J_{t+1}) - (A_t + J_t)\} + D_t \quad \text{(A2.2)}$$

We assume all the depreciation reported on the book is allocated to non-land business assets, assuming the corporation does not let the land depreciate. Note that the investments calculated using (A2.1) and (A2.2) can be either positive or negative. Negative investments would imply (net) depletion or sales of the assets.

We assume that the book value of the business assets (including the construction in progress) was equal to its market value at the end of fiscal 1965 (beginning of fiscal 1966). Let XL_t and XK_t be the market value of land and the business assets other than land in place respectively at the beginning of period t (including the construction in progress). Then our assumptions are:

$$XL_{1966} = \alpha(A_{1966} + J_{1966}) \quad \text{(A2.3)}$$

$$XK_{1966} = (1-\alpha)(A_{1966} + J_{1966}) \quad \text{(A2.4)}$$

If the corporation was established after 1966, the above equalities are assumed to hold at the end of its first accounting year.

Letting p_{lt} be the land price and p_{kt} be the price of the other business assets respectively at the beginning of period t, and δ be the economic depreciation rate of the (non-land) business assets, we can calculate the market values of the land and the other business assets for the following years recursively using the following formulas.

$$\text{(A2.5)} \quad XL_t = \frac{p_{lt}}{p_{lt-1}} XL_{t-1} + IL_t$$

$$\text{(A2.6)} \quad XK_t = \frac{p_{kt}}{p_{kt-1}} (1-\delta) XK_{t-1} + IK_t$$

The market value of total business assets at the beginning of period t is calculated by summing up XL_t and XK_t.

The economic depreciation rates for the non-land assets held by public corporations are taken from Economic Planning Agency (1998). The depreciation rates used for each corporation are reported in the last column of Table A2.1. For the price of business assets other than land, the deflator for the public investment reported in the national income accounts was used. Land price indices compiled by the Japan Real Estate Research Institute were used for the land price. Table A2.2 lists the land price series that we used for each public corporation.

Table A2.1. Assumptions on Business Assets and Depreciations for Public Corporations

Agency	Land as % of Total Business Assets	Life of Non-land Assets (years)	Depreciation Rate of Non-land Assets (%)
Urban Development Corporation			
Account for Urban Development	22	45	5.0
Account for Railroads	5	26	8.5
Japan Environment Corporation	20 *	15	14.2
Teito Rapid Transit Authority	6	34	6.5
Japan Sewage Works Agency	19	15	14.2
Japan Highway Public Corporation	20 *	47	4.5
Metropolitan Expressway Public Corporation	20 *	47	4.5
Hanshin Expressway Public Corporation	20 *	47	4.5
Honshu-Shikoku Bridge Authority	5 *	45	5.0
Japan Railway Construction Public Corporation	8	26	8.5
New Tokyo International Airport Authority	32	17	12.7
Water Resources Development Public Corporation	10 *	49	4.6
Electric Power Development Company	10 *	26	8.3

Notes: For about a half of the public corporations listed above, we could not get any quantitative information about the proportion of land in total business assets. Somewhat arbitrarily, we set

the proportion of land in the business assets for corporations that build highways (Japan Highway, Metropolitan Expressway, and Hanshin Expressway) to be 20% (somewhere between railroads and airports). The same number is used for Japan Environment Corporation. For Water Resources Development Public Corporation and Electric Power Development Company, whose land holdings are in more remote areas, we assume the proportion of land assets in the total business assets is 10%. Finally, for Honshu-Shikoku Bridge Authority, which builds bridges over straits, the proportion of land is assumed to be 5%.

Life of the non-land business assets for each corporation was calculated as the weighted average of the lifetimes for the components of the assets. The figures for each type of assets were taken from Economic Planning Agency (1998) and as follows: road (47 years), airport (17 years), assets held by Japan Railway Construction Public Corporation (26 years), subway (34 years), sewage (15 years), waste disposal facilities (15 years), flood control facilities (49 years), and assets held by Electric Power Development Company (26 years).

The depreciation rate for each corporation is calculated so that the scrap value of the assets at the end of their life is 10% (the scrap value of assets specified in the Japanese tax code) of the original value.

We tried to include all public corporations whose business assets mostly consist of physical capitals. We were not able to reevaluate the assets of Japan Regional Development Corporation and Japan Green Resources Corporation, because the change in the accounting rule in 1986 made it impossible for us to come up with consistent time series.

Table A2.2. Land Price Series

Agency	Land Price Series Used
Urban Development Corporation	
Account for Urban Development	JREI (6 largest cities, residential use)
Account for Railroads	OPLP (Tokyo metropolitan, residential use)
Japan Environment Corporation	JREI (all urban areas, industrial use)
Teito Rapid Transit Authority	OPLP (Tokyo metropolitan, semi-industrial use)
Japan Sewage Works Agency	JREI (all urban areas, residential use)
Japan Highway Public Corporation	JREI (all urban areas, all uses)
Metropolitan Expressway Public Corporation	OPLP (Tokyo metropolitan, semi-industrial use)
Hanshin Expressway Public Corporation	OPLP (Osaka metropolitan, semi-industrial use)
Honshu-Shikoku Bridge Authority	JREI (outside 6 largest cities, residential use)
Japan Railway Construction Public Corp.	JREI (all urban areas, all uses)
New Tokyo International Airport Authority	OPLP (Tokyo metropolitan, semi-industrial use)
Water Resources Development Public Corp.	JREI (all urban areas, industrial use)
Electric Power Development Company	JREI (all urban areas, industrial use)

Notes: JREI denotes a series taken from *Index of Urban Land Prices* by the Japan Real Estate Institute. OPLP denotes a series taken from *Kôji Chika (Officially Published Land Prices)* by the Ministry of Land, Infrastructure, and Transport.