# DEBT MANAGEMENT IN JAPAN: HOW TO COPE WITH INTEREST RATE RISK

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## Introduction

Currently Japan is the largest net issuer of sovereign bonds in the world. Aspects of managing the debt are the topic of this chapter. In particular, the focus is on the issue of possible variations in future interest payments. Because the amount of the central government public debt outstanding is close to 100 per cent of GDP in the fiscal year 2004, even a small increase in interest rates can lead to a considerable impact on interest expenditures. This chapter argues that, given the probability of higher interest rates, the debt structure should be properly managed with due consideration to refinancing and interest rate risk.

In the fiscal year ending 31 March 2004, bonds worth 101.3 trillion yen were issued as marketable debt in Japan. Of that, 38.3 trillion yen (about 421 billion USD at 110 yen per US dollar) was the net increase in national government debt outstanding. Because of past large fiscal deficits, especially in the late Nineties, the ratio of central government debt to GDP has been increasing, reaching approximately 96 per cent at the end of the fiscal year 2004.

Until 1975, debt financing of current expenditures was needed only once in post-war Japan. Then, in the fourth quarter of 1973, the Japanese economy was hit by the oil crisis and the economy experienced a deep recession in 1974 and 1975. Against these developments, a substantive debt policy was introduced in the fiscal year 1975 to finance the high level of public expenditures. It was a major change in fiscal policy. Japanese law follow the UK Treasury's "Golden Rule" (see Woods' paper above), stipulating that the central government borrow only for investment purposes. To make it possible to finance current expenditures in excess of current revenue (that is, run a deficit), specific legislation to override the golden rule had to be approved by the Diet. This has been done on a temporary basis. And, every year since 1975, such legislation has been enacted. The amended budget of 1965 is the one exception to deficit financing before 1975.

From the mid-Seventies until the late Eighties, and again in the mid-Nineties, the annual budget has required debt financing of more than 20 per cent of total expenditures of the general account of the central government. (In addition, there are a number of special accounts to record and manage specific categories of outlays and revenues).

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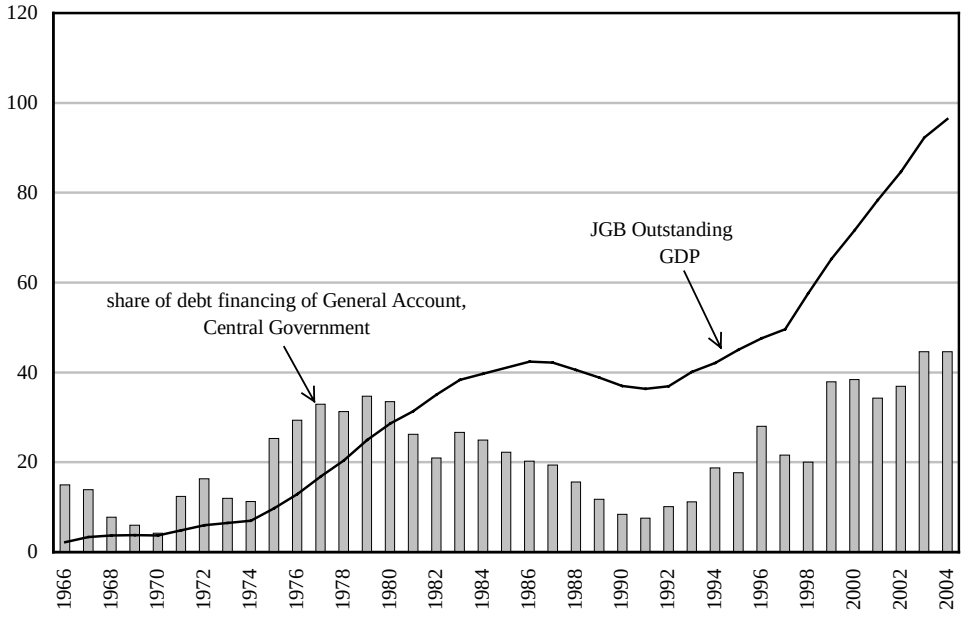
A remarkable accumulation of debt occurred during the period between the fiscal years 1997 and 2002: the increase in central government debt outstanding was about 163 trillion yen, going from 258 to 421 trillion yen. Figure 1 shows the percentage of the general account financed with debt, and the resulting accumulation of debt as a percentage of GDP. The sharp rise in debt outstanding from 1997 to 2002 should be emphasized. In formulating the general account budget of the central government in the fiscal years 2003 and 2004, an unprecedented 45 per cent of total expenditure is being financed by issuing debt.

The general government balance, which equals the sum of central and local governments, plus social security funds, also shows severe deterioration in the late Nineties. The above deficit figures of the central government correspond to a structural fiscal balance of 6.3 per cent of GDP on average for the years 1997 to 2003, according to OECD general government data. Historically, social security funds have been in surplus. However, in 2003, they turned into a deficit. This implies further acceleration in the speed of accumulating general government debt.

**Figure 1**

**Debt Financing and Debt Outstanding**
*(percent)*




Note: The line plots outstanding central government debt as a percentage of GDP. The bars plot, for the General Account of the central government, the share of debt financing as a percentage of expenditures. Data for the fiscal year 2003 are estimates and those for the fiscal year 2004 are as budgeted.

**Table 1**

**Trends in Fiscal Balance and Changes in Financial Position, General Government, 1987-2003**

| | Structural financial balance | Social security fund | Changes in net financial liabilities | Changes in gross financial liabilities |
|---|---|---|---|---|
| 1987/92 | 1.02 | 2.96 | –52.6 | –6.7 |
| 1992/97 | –3.94 | 1.92 | +20.7 | +31.5 |
| 1997/03 | –6.27 | 0.49 | +43.9 | +54.7 |

Note: Entries are annual averages of percentages of nominal GDP for the period indicated. Liabilities include the debt of the Japan Railway Settlement Corporation and the National Forest Special Account from 1998 onwards.
Source: Calculated from OECD fiscal balance and financial position data.

In terms of the primary balance, the general government deficit equals 5 per cent of GDP. Trends in the fiscal balance and changes in financial positions of the general government are shown in Table 1.

The saving or investment balances of the major economic sectors are shown in Figure 2. In Japan, the household sector has always had high savings, and its accumulation of financial assets stood at more than 2.6 times GDP at the end of the fiscal year 2003. It should be noted that the size of savings has been declining since the early Nineties. In fact, the savings rate was 6.2 per cent for the fiscal year 2002, down from 6.5 per cent in 2001. For the corporate sector, we observe a great change. The corporate sector used to be a constant net investor: however, since the mid-Nineties it has repaid debt as firms restructured their balance sheets. Thus the sector was not a competitor for funds with the government in the capital market during the late Nineties.

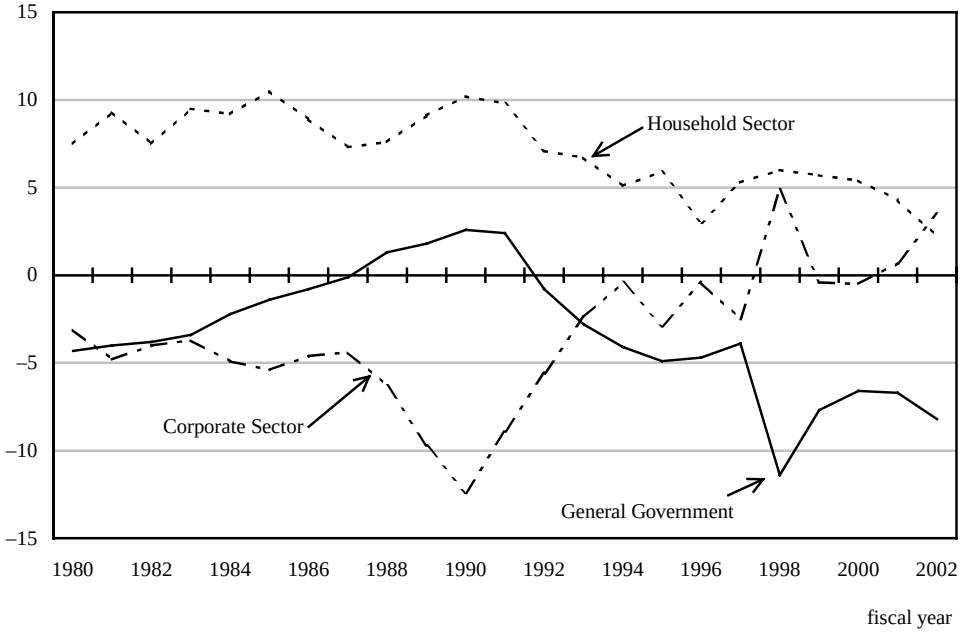
Because of stagnant private investment and the relatively high savings rate of the household sector, further supported by loose monetary policy in the late Nineties, the long-term interest rate has come down to below 2 per cent by 1998. Accordingly, the share of interest payments in the total expenditures of the general account of the central government has stayed at approximately 10 per cent in the Nineties despite the sharp rise in government debt outstanding. It constitutes the second largest item in the budget.

In Figure 3, the 10-year JGB (Japanese Government Bond, which will be precisely defined in Section 1) yields and 6-month bill rate since 1986 are shown. These are on declining trends. The 10-year JGB was issued as high as 7.9 per cent in 1990; however, in 2003 it was issued at less than 1 per cent. In the fiscal year 2002, the average coupon of all outstanding JGB was approximately 2 per cent.

**Figure 2**

**Sectoral Savings or Investment Balances in the SNA Accounts**

*(percent)*




Note: Data are shown as percentages of nominal GDP, measured using 93 SNA. This plots only three of the four components of the National Income Identity. During the period, the Japanese economy had excess savings (net exports) of about 2 per cent of GDP.
Source: *Annual Report on National Accounts 2004*, Cabinet Office.

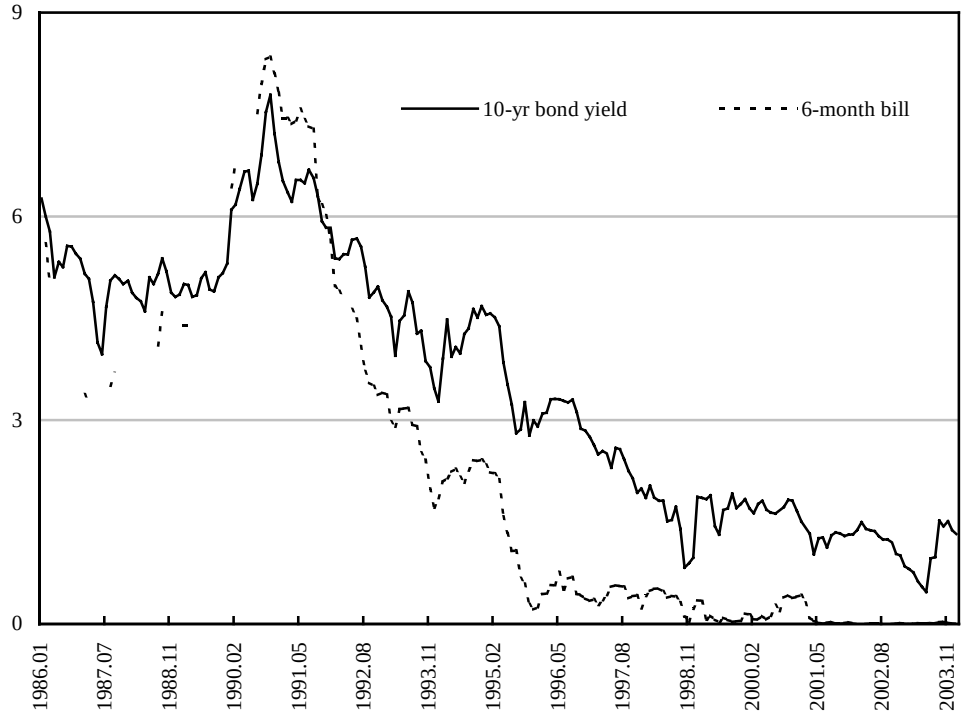
It is obvious that the situation described above will not continue for long, as the economy has been picking up since late 2003. As real economic growth changes, interest rates may begin to rise, and eventually the resulting increase in debt service costs may be a great threat in managing the government budget. Most short-term effects arising from interest rate changes should be analyzed from the viewpoint of macroeconomics. However, it also is important to evaluate the long-run implications associated with changes in interest rates, based on the debt structure and the choice of strategy in debt management policy.

In this paper, we focus on the issue of possible variations in future interest payments. As noted, since the amount of the public debt outstanding of the central government is close to 100 per cent of GDP, even a small increase in interest rates can lead to a considerable impact on interest expenditures, depending on the debt structure.

Section 1 briefly discusses the concept of government debt in Japan. The current debt structure and other characteristics of Japanese debt management policy

**Figure 3**

**10-Year JGB Yields and 6-Month Bill Rate since 1986**
*(percent)*




Note: Yields to subscribers of 10-year JGB and 6-month bill.
Source: Bank of Japan.

also are explained. Some European debt authorities have developed a stochastic simulation technique to analyze the effects of fluctuations in interest rates. In Section 2, the analytical framework for simulation exercises and major results are presented. The method used in this paper is in line with the concept of Cost at Risk formulated by the Danish authority and others. Based on the results of simulation exercises using the stochastic modelling of the interest rate, implications for policy alternatives are given in Section 3.

## 1. Current debt structure

### *1.1 Defining government debt*

It is common to define the government as the general government, consisting of the central and local governments, and the social security fund. Total gross

liabilities of the general government in Japan equalled 808.2 trillion yen, equivalent to 162 per cent of GDP, at the end of the fiscal year 2002 according to data in the System of National Account (SNA). Of this, the gross liability of central and local governments together is 781.6 trillion yen (157 per cent of GDP).

In economic terms, the net financial position of the broad-based government appears more relevant. Data are in Table 2. The net financial position of the general government is 359.7 trillion yen, or 72 per cent of GDP. However, this figure is misleading. In consolidating the social security fund, only existing financial assets are counted, without any countervailing item from the liability side of either the social security fund or the central government. As shown in the table, the social security fund holds financial assets of 237.3 trillion yen at the end the fiscal year 2002. On the other hand, there exist current and future promised payments of benefits which do not appear in current SNA data.[1]

By excluding the social security fund, the net financial positions of the central and local government is 570.4 trillion yen, which is 115 per cent of GDP.

**Table 2**

**Gross and Net Financial Position of General Government, End of Fiscal Year 2002**
*(trillion yen)*

| | Central Government | Local Government | Social Security Fund | General Government |
|---|---|---|---|---|
| Gross Liabilities | 600.0 | 181.6 | 26.7 | 808.2 |
| Net Financial Position | –451.3 | –119.1 | +210.7 | –359.7 |

Source: Annual Report on National Accounts 2004, Cabinet Office.

Regarding the local governments, it turns out that to include them is not useful given the structure of local government in Japan. There are of more than three thousand entities and exact outlays and revenues are calculated with long lags after the end of the accounting period. Local governments conduct their own debt management under supervision of the Ministry in charge and such policies are not able to be captured in an operational manner.

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[1] Since the social security fund is managed, in principle, as pay-as-you-go, it is not necessary to count these future obligations as contingent claims. Under the official forecast, the current contribution level is insufficient to sustain the current benefit level in coming years and future increases in contribution and transfer payments from the general account to pension special accounts and cuts in benefits are scheduled.

In view of the purpose of analyzing debt management policy, the discussion here should focus on marketable, central government debt issued in the general account, which is called JGB (Japanese Government Bonds). Furthermore, for debt management policy, the gross figures attract more concerns and appear to be relevant for the analysis.

First, in order to know the size of debt servicing, it is necessary to calculate the size of the gross liability. It is worth noting that most of the changes in the net financial positions of the government arise from changes on the liability side as is shown in Table 3 which decomposes the financial position of the government in SNA data. It also is true that not all government financial assets accrue regular returns. An example is investments in government-affiliated agencies. Second, in a financial sense, the gross size of outstanding – as well as the gross size of issuance – appears to be an important indicator. Government securities held by the public sector may be subtracted from the gross total to obtain the net position of the government as an issuer. However, in so far as these securities are marketable, their potential impact should be considered based on the gross figures.

**Table 3**

**Decomposition of Government Financial Positions in SNA Data**
*(trillion yen)*

| | **1992-97** | **1997-2002** |
|---|---|---|
| *Financial Assets* | +107.4 | +78.4 |
| Central Government | +36.2 | +48.7 |
| of which: other financial assets | +20.7 | +25.4 |
| Local Government | +5.7 | +0.4 |
| Social Security Fund | +65.5 | +29.3 |
| *Liabilities (central + local)* | +221.7 | +278.0 |
| Central Government | +152.2 | +234.8 |
| Local Government | +69.5 | +43.2 |
| *General Government* | | |
| Net financial Position | –124.6 | –204.6 |
| Gross financial Position | –232.0 | –283.0 |

Source: Cabinet Office.

### *1.2 Outline of JGB*

Hereafter, the principal focus is on the gross amount of JGB. JGB currently includes bonds issued under the Fiscal Loan Funds Special Account that was established as a result of institutional changes in the Fiscal Investment and Loan Program in 2001. The funds raised through these special account bonds are used to extend loans to public corporations. Because these special-account bonds are excluded from general government liabilities and their debt service is an obligation of the special accounts, most calculations in this paper are conducted based on a general-account JGB basis. (Regarding the financial characteristics of the special-account JGB, they are the same as general-account JGB).

Until the late Eighties, most public funds were raised through 10-year bonds. This was because the government was expected not to issue short-to-medium term

**Table 4**

**JGB Varieties and Outstanding Amounts**

| **Type of Debts** | **Maturity** | **Outstanding** ***(trillion yen)*** | **% share** |
|---|---|---|---|
| Interest-bearing | 2-4-year | 39.9 | 9.5 |
| | 5-year | 50.1 | 11.9 |
| | 6-year | 14.8 | 3.5 |
| | 10-year | 230.5 | 54.7 |
| | 20-year | 34.9 | 8.3 |
| | 30-year | 2.1 | 0.5 |
| Floating-interest rate | 15-year | 11.9 | 2.8 |
| | small-savers 10-year | 0.4 | 0.1 |
| Discount Bonds | Less than 1-year | 34.4 | 8.2 |
| | 3-year | 1.5 | 0.4 |
| | 5-year | 0.7 | 0.2 |
| Total | - | 421.1 | 100.0 |

Notes:
- Data are as of the end of March 2003, excluding Fiscal Loan Funds Special Account Bonds. The outstanding amount of Fiscal Loan Special Account Bonds at end of the fiscal year 2002 is 75.6 trillion yen. Not all the varieties mentioned above are currently issued.
- The Issuing plan for the fiscal year 2004 has an average maturity of 6.17 years.

Source: Ministry of Finance.

notes in competition with commercial banks. Since then, both the banks and government have diversified offerings. JGB now include 5- and 20- year fixed-rate bonds; 10-year floating-rate bonds specifically designed for individual investors were introduced in March 2003. The latest is a price-indexed bond, introduced in March 2004 and issued by auction. These policy measures brought a variety of notes and bonds to Japan as shown in Table 4. As yet, no foreign-currency-denominated bonds have been issued.

In the late Nineties, many reform measures in debt management were taken, mainly motivated by the consequences of financial deregulation. These measures have led to more market-based placement through auction, in place of a syndicated underwriting system of issuance.

Further steps toward achieving a more efficient and liquid markets have been taken since then. Following are the major actions taken in primary markets since 2000:

1) 15-year floating bonds introduced by the auction method, June 2000,
2) 3-year discount note introduced by the auction method, November 2000,
3) Reopening of an issue started in March 2001,
4) STRIPS introduced in January 2003,
5) 10-year floating-rate bonds for individual investors introduced in March 2003.

In the fourth quarter of 2004, a new system of a kind of primary dealer will be enacted to prepare for any hazardous situations in the markets by enabling closer communications with market participants.

### *1.3 Structure of JGB*

#### *1.3.1 Maturity structure*

The average maturity for newly issued bonds was eight to ten years in the Eighties and five to six years in the Nineties. In the maturity structure of JGB, the 10-year bond is still dominant, with a 55 per cent share of the outstanding total. However, average maturity at issue is about 6 years in the 2004 issuing plan. Although the duration is not published, a simple average of the remaining life of existing bonds is 4.92 years at the end of the fiscal year 2001.

The expected redemption profile as of March 2004 shows a relatively smooth picture except for a large increase for 10-year bonds in 2008. To mitigate the hump in redemptions, a buyback of 2 trillion yen is planned in the fiscal year 2004.

#### *1.3.2 Distribution of holders*

Table 5 shows the current holders of JGB, inclusive of Fiscal Loan Funds Special Account bonds. Several features warrant attention. First, the share of the

**Table 5**

**Debt Outstanding by Holder**

| **Categories** | | ***(trillion yen)*** | **% share** |
|---|---|---|---|
| Public Sector | | 238 | 42.8 |
| | (of which) FILP | 55 | 10.0 |
| | (of which) Postal Saving | 86 | 15.5 |
| | (of which) POST insurance | 53 | 9.6 |
| Central Bank | | 83 | 15.0 |
| Private Financial Institutions | total | 176 | 31.7 |
| | (of which) Banks | 111 | 20.0 |
| Mutual Funds | | 8 | 1.4 |
| Security Houses | | 7 | 1.2 |
| Foreign Investors | | 18 | 3.2 |
| Households | | 13 | 2.4 |
| Total | | 556 | 100.0 |

Note: Figures are at the end of December 2003, inclusive of Fiscal Loan Funds Special Account bonds. FILP refers to the Fiscal Investment and Loan Program.
Source: *Flow of Funds Statistics*, Bank of Japan.

total public sector, including the central bank, is as high as 57.8 per cent. Secondly, only 3 per cent is held by the overseas investors. Private banks are the second largest holders. This is partly due to their redeployment of capital away from lending because the bad-loan problem has reduced their appetite for risk.

It is well recognized that in order to secure financing in the coming years, broadening the investor base is one of the key issues for debt management. Household individuals are the first to be considered as a target, and in 2003 a 10-year floater was introduced. This special bond for individuals has been selling well under the current deflationary economic conditions, and more products specifically designed for individuals may be introduced shortly. Another area to be explored is overseas investors, but it is said that the complicated procedures for exempting tax withholding are possible obstacles to enlarging investment from overseas.

## 2. Risk analysis

The risk aspects that we focus on are those associated with changes in interest rates and refinancing from a medium to long-term perspective. Since the late Nineties, some debt management authorities have developed a stochastic approach to measure and control these risks. In this paper, the first attempt to apply stochastic simulation to evaluate future variations in interest payments for the Japanese case is presented.

### *2.1 Analytical framework for the stochastic simulations*

In the case of Japan, no foreign-currency-denominated bonds are issued and, because the share of floating-rate notes and bonds is negligible, the most relevant policy option to analyze is the choice among different maturity structures as an issuing strategy.

For this purpose, three patterns of issuance are assumed. These are the short maturity pattern, benchmark, and long maturity pattern. Their details are described below. Since we are interested in the distribution of future interest payments under the three options, a Monte Carlo simulation was conducted based on stochastic modelling of the interest rate.

To perform such simulation, it is necessary to assume the scenario of budget deficits for the entire simulation period. The Ministry of Finance publishes simple calculations of future debt outstanding. The series involves simple budget calculations and is based on the assumption that current policies continue. In addition, there is no allowance for economic feedback, and no macromodelling is used. However, they are the best data available and are a reasonable starting point for our purposes. Thus, in our simulation, MOF's series is used for future deficits. Accordingly, the amount of total debt outstanding is 596 trillion yen at the end of the fiscal year 2007 and 766 trillion yen at the end of 2012, compared with 483 trillion yen as of the end of the fiscal year 2004. The other assumptions are as follows:

1) four types of notes and bonds are available. They are 1-year, 5-year, 10-year, and 20-year fixed-interest rate obligations,

**Distribution of Maturity for Each Issuance Option**
*(percentage and years)*

| Option | 1-yr | 5-yr | 10-yr | 20-yr | Av. maturity |
|---|---|---|---|---|---|
| Short | 60 | 30 | 5 | 5 | 3.6 |
| Benchmark | 45 | 25 | 25 | 5 | 5.2 |
| Long | 5 | 10 | 40 | 45 | 13.6 |

2) the debt structure at the end of the fiscal year 2002 is known precisely from published data, so future interest payments on existing debt can be calculated almost precisely. (The small amount of variable-rate bonds makes little difference, and the scheduled buyback also can be allowed for). The system for calculation is built on a quarterly basis,
3) short, benchmark and long issuing strategies are options for the authority. Benchmarks strategy models recent annual issuing plan with some simplifications,
4) The stochastic process of the short rate is assumed as:

$$dr_t = (\alpha + \beta r_t)dt + \sigma r_t^{\gamma} dz_t$$

where $r_t$ is spot rate and $\alpha, \sigma > 0, \beta < 0$ are parameters and $z_t$ is the Wiener process. In this formulation, when $\gamma$ is equal to 0, the interest rate process is regarded as the Vasicek model and if $\gamma$ is 0.5, the CIR model is assumed. (To fit the term structure, nonlinear estimation is used). By discretizing the equation above, and applying the generalized method of moments to estimate the parameters by using past monthly data of 3-month interest rate, the following values are obtained.

**Estimated Parameters**

| | Data period | α | β | σ | γ | α/β |
|---|---|---|---|---|---|---|
| Case 1 | Jan. 1996-Dec. 2000 | 0.106 | –0.455 | 0.11 | 0 | 0.234 |
| Case 2 | Jan. 1987-Dec. 1992 | 0.316 | –0.078 | 0.307 | 0.5 | 4.04 |

Note: All values are statistically significant at the 5 or 10 per cent level except for α and β in case 1.

5) For each portfolio strategy, a Monte Carlo simulation has been conducted 5,000 times with an alternative interest rate formulation for the fiscal years 2003 to 2017. In each year, the relevant statistics – such as mean, standard deviation and 95 percentage points value of the distribution of annual interest payments – are calculated.

### *2.2 Simulation results*

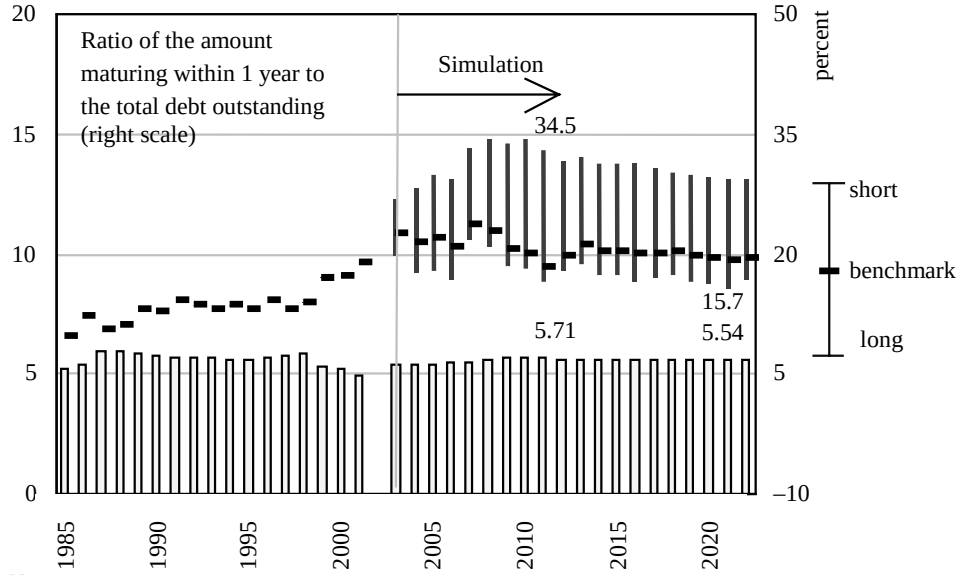
#### *2.2.1 Refixing ratio*

Each pattern of the issuance has different implications related to the risk associated with refinancing. Figure 4 shows the ratio of the amount of debt maturing

within one year to the total debt outstanding, often referred to as the refixing ratio, for the three strategies. The result is striking when the authority continues to follow the short pattern: the calculated refixing ratio will quickly rise to a level above 30 per cent. In contrast, the benchmark pattern stays rather on the stable side. Average remaining years of the entire debt would not change very much in the benchmark case.

**Figure 4**

**Simulation Results (1)**



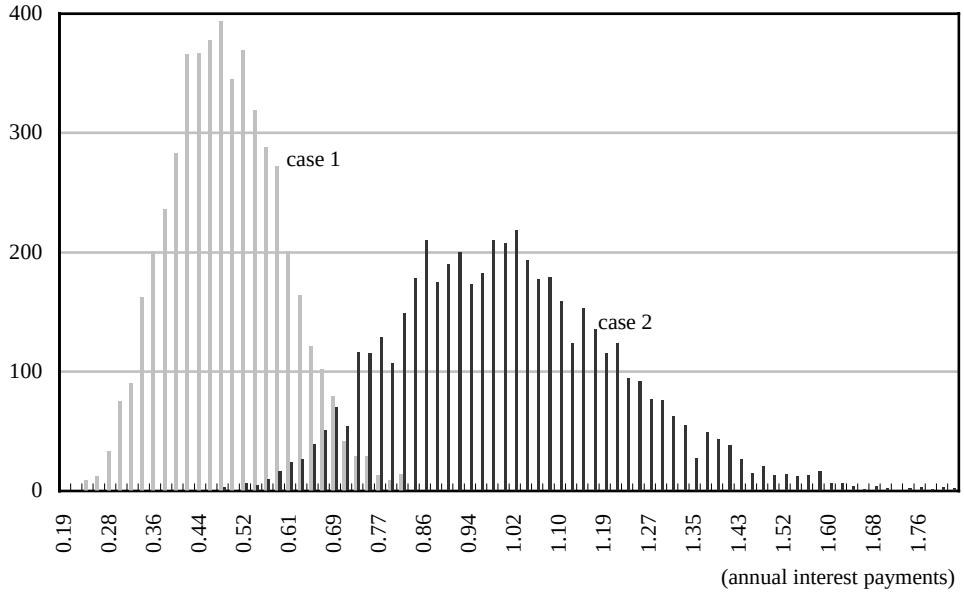

Notes:
- For the ratios of the amount of debt maturing within one year to the total outstanding, the highest value corresponds to the short portfolio strategy and the lowest to the long portfolio.
- Bars show the average remaining years of total marketable debt for the benchmark strategy.
- Data after 2001 are discontinuous because of simplifying assumptions in the simulation.

### *2.2.2 Distribution of future interest payments*

Figure 5 demonstrates how the distribution of the amounts of future interest payments changes under different interest-rate dynamics. As is often pointed out, the exact specification and modelling of interest-rate dynamics are key to obtaining meaningful simulation results. In the figure, the left picture shows the simulation results based on the case 1 modelling of the interest rate and the right picture corresponds to case 2. In both cases, maturity choices are assumed to follow the benchmark pattern.

**Figure 5**

**Simulation Results (2)**




Notes:
The picture on the left is the simulated distribution of annual interest payments in the fiscal year 2012 generated by the case 1 formulation of interest rates, and the right is the distribution generated by case 2 formulations. In both calculations, the benchmark scenario is assumed. The size of annual interest payments are standardized as the mean value of case 2 equals to one.

Since case 1 reflects a period of low interest rates and case 2 reflects one of relatively high yields, the means and standard deviations differ greatly. As a practical matter, the interest rate process may not be stationary for the period of time we are interested in; therefore it is not easy to capture and model the interest rate dynamics with a relatively simple but appropriate formulation.

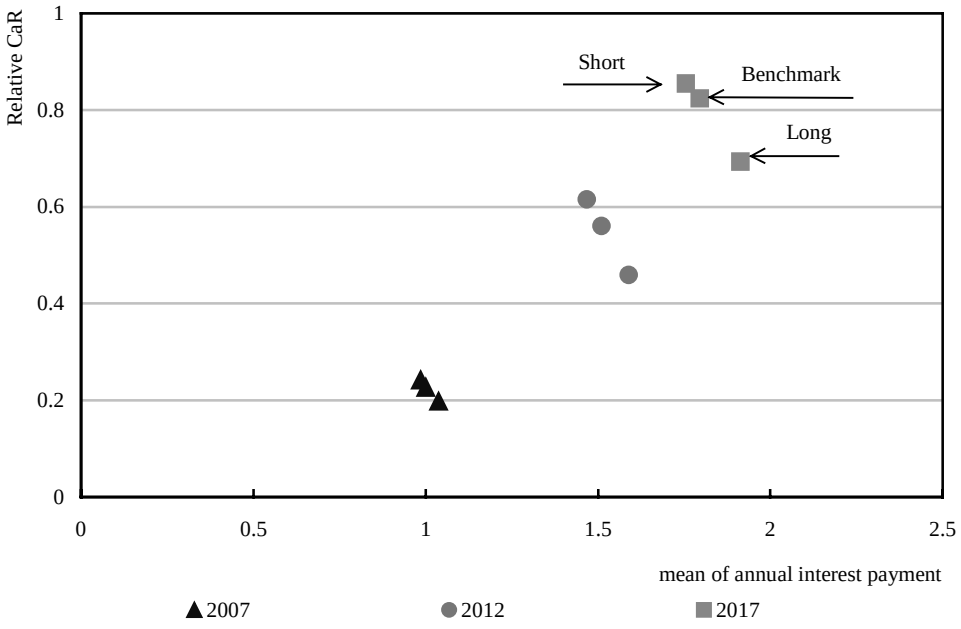
There are also some technical issues that pose problems: first, interest rates were regulated until the mid-Eighties; second, except during the bubble period, rates almost always had declining trends and Japan thus has had only short experiences with rising interest rates under deregulated markets; and third, since the 20-year and 30-year bonds were introduced very recently, their price histories are insufficient to model the whole picture of the term structure of interest rates, especially for superlong ends.

### *2.2.3 Trade-off between cost and risk*

In the present exercise, an upward-sloping yield curve is generated that describes roughly 85 per cent of the past data. With this yield curve, we can confirm

**Figure 6**

**Simulation Results (3)**




Note: The horizontal axis measures annual interest payments standardized by the mean value of the benchmark scenario with the case 2 interest rate model. The vertical axis measures the relative CaR, defined as the difference between the 95 percentage points value of the distribution and its mean. For each of the three years, relative to the vertical axis, the data points are the short portfolio, benchmark, and long portfolio. Interest rates are assumed to follow case 2. The size of annual interest payments are standardized as the mean value of case 2 equal to one.

the trade-off between cost, measured by the mean of the distribution, and risk, measured by the size of variations in interest payments, as shown in Figure 6. The figure plots the trade-offs for the years 2007, 2012 and 2017. The simulation results show that the difference in the size of risk measured by the size of deviations among the three issuing patterns increases as time extends. Thus, the short portfolio looks more risky in the sense that its risk grows relatively faster than that of the long portfolio.

## 3. Policy implications

General caution has to be observed in adopting this type of approach and its preliminary nature. Therefore, the numbers should not be used for actual bets on the

JGB market. However, from the exercises in Section 2, we can derive some implications regarding the direction of debt management policy.

Based on the simulation results, it seems very clear that the relatively short portfolio strategy increases the size of market risk even in the next few years. This basically reflects the high turnover in that strategy. (In the current formulation, expected higher volatility of the short rate may not be precisely modelled.) The ratio of the amount of debt maturing within one year to the total outstanding is expected to surpass the 30 per cent level if the authorities continue to follow this short strategy, given the assumptions and some simplifications made in the calculation. It is also confirmed that the difference in the size of relative CaR between short and long portfolio increases as the simulation period extends.

These results may be obvious intuitively for debt managers; however, the simulation reveals the quantitative aspects of each case. Thus, this kind of exercises should be quite useful in formulating the exact issuing plan.

The modelling of interest rate dynamics is a real key issue that can result in considerable differences in simulation outcomes. In fact, stochastic application in this field is at an early stage and more study on appropriate modelling of the interest rate is necessary to further develop the risk analysis.

In current Japanese capital markets, a variety of financial products with long maturities are not available in sufficient quantities, given the increasing demand of institutional investors who wish to hold liabilities of long duration. Many corporate pension funds also are in favour of such long-term investments. It seems there is more room to issue super-long JGB, not only from market demand but also from the viewpoint of interest-rate risk management. The frequency of 20-year and 30-year JGB issuance, as well as the size of each issue can be increased.

Last, but not the least: an important aspect is that unless stable macroeconomic performance is achieved, any efforts in the sophistication in the risk management of debt policy may not work successfully. The debt management authority – the Ministry of Finance – intends to enhance the functions of monitoring and analysis of the risk aspects of its policies, as announced in December 2003. These efforts, along with a continuous reform in primary markets, may be most effective in a stable macro economy.

In this regard, the most urgent and immediate task for the Japanese government is to restore the primary balance of the budget as soon as possible. As observed in the Introduction, the declining saving rate of the household sector may be a warning signal to policy makers under the ongoing aging of the population.

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