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# The Need for Redefining Japan's Government Debt Management Policy

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## 1. Essential Features of Government Bonds

### 1) The Polestar of Financial Markets

As the first step in discussing government debt management policy, we must define what government bonds are. Essentially, such issues are a means for taxpayers to borrow money from themselves. At the same time, from the holder's standpoint, government bonds are financial assets that generate interest. The issuance of government bonds cannot be viewed as a mechanism that leaves taxpayers free of any burden. If the interest rate on government bonds were to remain above the economy's growth rate for a long period of time, for example, the outstanding volume of bonds could exceed not only the nation's level of output but also the pool of domestic savings. This would lead to a critical situation in which there were no buyers of government bonds even if interest rates climbed further, and taxes would have to be increased to avoid default.

As government bonds are essentially loans that use future tax revenues as security, they are financial assets that do not carry any credit risk domestically. The Japanese government, for example, guarantees that the principal and interest on government bonds it issues will be paid on time.

With liabilities other than government bonds, the holder takes on a credit risk that the principal and interest may not be paid as promised, for example in the case of the bankruptcy of the issuing company. In Japan deposit insurance provides limited asset protection for holders of bank deposits against bank insolvency. Moreover, a payoff-system that provides limited guarantees to term deposits in excess of ¥10 million is expected to be resumed in April 2002 after having been frozen since June 1995.

In addition to being risk-free, government bonds are highly liquid because the issue amounts are larger than for other liabilities such as corporate bonds.

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Since government bonds present no credit risk in the country where they are issued and since they have a higher market liquidity than other financial assets, they serve as the reference point for the pricing of all other financial assets. Interest rates for other debt instruments (financial assets) reflect their incremental credit risk and lower liquidity compared to government bonds, as indicated below:

$$\text{Interest rate on financial asset} = \text{Interest rate on government bonds} + \text{credit risk premium} + (\text{il-}) \text{liquidity premium}$$

For instance, at the beginning of September 2001 Sony issued ¥100 billion in 5-year bonds and ¥50 billion in 10-year bonds. Reflecting their higher credit risk and lower market liquidity compared to government bonds, interest rates on the Sony bonds were higher than those on government bonds with the same maturities, i.e., by 13 basis points for the 5-year bonds and 12 basis points for the 10-year bonds (1 basis point = 0.01%). Thus, it is not an exaggeration to say that government bonds are the polestar for the financial and capital markets.

## 2) Three Goals and Five Principles of US Debt Management Policy

With the recognition that government bonds are the polestar for all financial assets, the goals of government debt management policy in the United States focus not only on “the smooth and assured digestion of government bonds,” but also on the promotion of efficient capital markets.

For example, in testimony before the House Ways and Means Committee on June 24, 1998, Gary Gensler, assistant secretary for financial markets at the US Department of the Treasury, discussed the following three major goals of government debt management policy (Table 1).

**Table 1. US Government Debt Management Policy Goals**

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|--|
| <ul style="list-style-type: none"> <li>• Ensuring sound cash management</li> <li>• Achieving the lowest cost financing for the taxpayers</li> <li>• Promoting efficient capital markets</li> </ul> |
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The first is sound cash management—ensuring that Treasury cash balances are sufficient at all times. This means that the Treasury has sufficient cash not to hinder financial expenditures determined by Congress. The second goal is achieving the lowest cost of financing for taxpayers. And the third is promoting efficient capital markets.

Gensler outlined five interrelated principles that guide the government's actions in pursuit of these goals (Table 2). The first principle is maintaining the risk-free status of Treasury securities, which makes it possible for the government to have ready market access at the lowest cost.

**Table 2: Five Principles Guiding US Debt Management Activities**

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| <ul style="list-style-type: none"><li>• Maintaining the risk-free status of Treasury securities</li><li>• Maintaining consistency and predictability in financing programs</li><li>• Ensuring market liquidity</li><li>• Financing across the entire range of the yield curve</li><li>• Employing unitary financing to aggregate all of the government's financing needs</li></ul> |
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Source: Gary Gensler, assistant secretary of financial markets, US Department of the Treasury; testimony before the House Ways and Means Committee hearings on June 24, 1998 (<http://www.treas.gov/press/releases/pr2555.htm>).

The second principle is maintaining consistency and predictability in government financing programs. The Treasury issues securities on a regular schedule with set auction procedures. Avoiding the temptation to act opportunistically to issue debt when market conditions appear favorable reduces uncertainty in the market and helps minimize the government's overall cost of borrowing.

The third principle is that the Treasury is committed to ensuring market liquidity. The US capital markets are the largest and most efficient in the world. Treasury securities are the principal hedging instruments used by investors across all markets. Liquidity promotes both efficient capital markets and lower Treasury borrowing costs.

As the fourth principle, the Treasury finances across the yield curve by diversifying bond maturities and thereby appealing to the broadest range of investors. Providing a pricing mechanism for interest rates across the yield curve further promotes efficient capital markets. In addition, a balanced maturity structure mitigates refunding risks, leading to fund-raising at lower cost.

The fifth principle relates to the integrated management of government debt by allowing the Treasury Department to employ consolidated financing. The Treasury aggregates all of the government's financing needs and borrows as a single entity. Thus, all federal government programs can benefit from the Treasury's low borrowing rate. Otherwise, separate programs with smaller, less liquid issues would compete with one another in the market. As undersecretary of the Treasury in 1971, Paul

Volcker proposed and promoted the concept of unitary financing by establishing the Federal Financing Bank.

In contrast, reforms instituted to Japan's Fiscal Investment and Loan Program (FILP) in fiscal 2001 allow individual FILP organizations to issue their own agency bonds. In other words, Japan is heading completely in the opposite direction from that indicated by the fifth principle guiding US government financing.

### **3) Monetary Policy and Government Debt Management Policy**

Even the US government encountered many complications managing its public debt until it adopted capital market efficiency as a focus of its debt management policy. The following section examines the historical changes in US government debt management policy from two points of view: the relationship between debt management policy and monetary policy and concepts of the optimum composition of government bond maturities.

With the huge increase in the outstanding balance of government bonds and plummeting bond prices during the Second World War, the US government became concerned that a rise in the interest rate on government bonds in real terms would have a severe impact on the economy. This would make it difficult to smoothly switch from the wartime economic system to peacetime. Accordingly, immediately after the war the Federal Reserve Board (FRB) carried out open market operations in order to maintain government bond interest rates at stable low levels by keeping the market prices of government bonds above their face value.

With the outbreak of the Korean War in 1950 the US government needed to adopt measures to counter expected inflationary pressures. In particular, this meant letting interest rates on government bonds, which had been kept low by FRB open market operations, rise. The Treasury Department and the FRB reached an accord in March 1951 releasing the FRB from its responsibility to support government bond prices and allowing the Treasury Department to issue government bonds on a market-price basis.

Furthermore, in March 1953 the FRB announced the introduction of a “bills-only” policy that limited the instruments it used for open market operations to short-term bills. As short-term bills are used easily as a cash alternative, they have a smaller impact on financial markets, even if the FRB used them as the instrument for open market operations. By contrast, if the FRB used less liquid medium- or long-term securities as the instrument for its open market operations, it would influence bond interest rates. This would force monetary policy into the same role that it had before

the 1951 accord between the Treasury and the FRB. The FRB continued this bills-only policy until 1961.

In the early 1960s, the Kennedy administration faced a crisis involving both a large outflow of capital and an economic recession. It was believed that high interest rates were needed to prevent the outflow of gold, while at the same time low interest rates were required to restore economic activity. The Treasury Department and the FRB tried to orchestrate a downturn in long-term interest rates without pushing down short-term rates. To this end, the Treasury Department concentrated on new issues of short-term bonds, and the FRB conducted its so-called “operation twist,” in which it sold short-term bonds and purchased long-term bills with maturities of 10 years or longer.

These measures for active debt management succeeded in the short run, but inflationary trends picked up steam in the United States from the later half of the 1960s. In order to control inflation, monetary policy was separated from government debt management policy and a money supply target was established in 1970 as a guide for open market operations. Interest rates on federal funds (FF) have been subject to frequent changes to achieve such a target, leading to a situation in which the interest rate on FF has become a primary means of conducting monetary policy.

Accordingly, US government debt management policy became oriented towards determining the optimum maturity composition of government bonds, that is, toward choosing the maturities of bond issues to minimize the total cost of issuing government bonds over the long run.

#### **4) Government Bond Structure with the Optimum Balance of Maturities**

Common sense suggests that the best policy for managing government debt to minimize government bond interest costs over the long term would be to issue bonds with longer maturities when interest rates are generally low and to issue bonds with shorter maturities when interest rates are high, under the expectation that they will decline. This method can control interest payments in the short term, but it requires the frequent issue of refunding bonds to finance the rollover in shorter maturities. Hence, trends in short-term interest rates at the time of refunding may also influence the government's total bond costs in the long run.

After generating huge deficits during the 1980s the Reagan administration shifted emphasis from short-term bond issues to medium- and long-term bonds. As long-term interest rates were generally high at the time, it would appear that selecting

short-term rather than long-term bonds would have meant lower government bond interest payments. However, the greater the proportion of short-term bonds in its outstanding issues, the greater the government's redemption obligations, and the greater the need to issue refunding bonds to finance the interest payments. If interest rates increase when the refunding bonds are issued, the total interest payments to finance with short-term bonds may exceed the costs of issuing long-term bonds initially.

In the 1980s the United States was facing the so-called "twin deficits"—huge budget and current account deficits—and it was being drawn into a vicious circle of sudden declines in the value of the dollar and sharp hikes in interest rates. The Reagan administration's decision to issue mainly bonds with longer maturities was made in consideration of the refunding risks under these circumstances.

In contrast, under the Clinton administration the US government preferred to issue bonds with shorter maturities. Immediately after his inauguration, President Clinton pushed Congress to enact the Omnibus Budget Reconciliation Act of 1993. Reducing the budget deficit as he had promised in his election campaign would lower interest rates, and with lower interest rates there would be less refunding risk if the focus shifted to shorter maturity bonds. In addition, the message that the government was shifting towards short-term bonds could raise expectations among investors that the government was heading towards a healthy fiscal policy and could cause interest rates to decline. Just as expected, significant reductions in the budget deficit were achieved and significant refunding risk did not appear in spite of the preference for short-term bonds.

US government debt management policies of the 1980s and 1990s are examples of using the concept of optimum composition of maturities to overcome the inherent tradeoff between the cost of government bond issuance and the cost of refunding.

Despite these successful applications of the concept, generally speaking, determining the optimal maturity composition is not an easy task. In order to take refunding risk into account, it is necessary to forecast a future yield curve and plot several interest rate scenarios with their probabilities. Then, one can seek the composition of bond maturities that minimizes bond issuance costs under the alternative scenarios. Even so, since there is no direct relationship between economic growth and interest rates, there is no guarantee that a given interest rate scenario in the real economy will lead to the minimum bond issuance costs.

Clearly, the optimum composition of bond maturities determined from such simulations must be discounted. As a way of dealing with such uncertainties the

goals of US government debt management policy are now focused on maintaining the risk-free position of government bonds and increasing liquidity in the government bond market.

## **2. Government Bond Issues and Monetary Policy in Japan**

### **1) Drastic Increases in Government Bond Issues**

The Japanese government has issued a huge amount of government bonds since the domestic financial crisis that surfaced at the end of 1997. In the original budget compilation the amount of new government bond issues planned for fiscal 1998 was ¥15.6 trillion. Under the government's policy to adopt "every measure to stimulate the economy," however, the amount rose to ¥34 trillion after the third supplementary budget. Similar large expansions were also seen in fiscal 1999. In the second supplementary budget the planned issuance of government bonds was set at ¥38.6 trillion. This would put the proportion of total revenues supplied by government bonds at 43.1 percent—exceeding even the figures recorded near the end of the Second World War in fiscal 1944 and 1945 and setting the worst record in history. Prime Minister Keizo Obuchi had to announce that he was the world's No. 1 borrower: "No one else faces such a mountain of debts as the Japanese prime minister, who owes ¥600 trillion."

In fiscal 2000, the government continued to adopt economic stimulation policies by saying, "if you run after two hares, you will catch neither." The total for new issues reached ¥34.6 trillion, and Finance Minister Kiichi Miyazawa noted that he "will be remembered as the finance minister who borrowed a huge amount of money without historical precedent." Fortunately the amount of new bond issues was held to ¥28.3 trillion in the original fiscal 2001 budget through temporary increases in income tax withholding, mainly as a result of concentrated maturities in postal term deposits.

In addition to the new issues described above, government bond issues also include refunding bonds to finance principal and interest payments on maturing bonds, as tax revenues cannot cover such redemption obligations. The need for refunding bond issues gradually increases in the years after the amount of new bond issues increases. For example, the issuing amount of refunding bonds has grown from ¥31.4 trillion in fiscal 1997 to ¥59.7 trillion in fiscal 2001.

Furthermore, in conjunction with recent reform of the Fiscal Investment and Loan Program, the government introduced a new type of bond, the FILP bond, from fiscal 2001. Unlike, the general account government bonds that use tax revenues as collateral, FILP bonds are issued as special account obligations of FILP, with loans to

FILP agencies as collateral. As financial products, FILP bonds are the same as construction bonds, deficit-covering bonds, and refunding bonds. In total, the government plans to issue roughly 100 trillion (¥98.5 trillion) in these four types of bonds in fiscal 2001. Thus, government bond issues are now double the ¥49.8 trillion figure for fiscal 1997 as a result of reckless fiscal policy in the recent several years.

## **2) Zero Interest Rate Monetary Policy and Government Debt Management Policy**

Although the amount of government bond issues has increased to record high levels, long-term interest rates on Japanese government bonds (JGBs) have remained at historically low levels, comparable to rates in the Republic of Genoa at the beginning of 17th century. The basic reason for the historically low long-term interest rates in today's Japan is that inflationary expectation is quite limited. But, some observers argue that central bank's Zero Interest Rate Policy (a policy to maintain interest rates at or near zero) is a background condition keeping the rates on government bonds low. In fact, however, there is no relationship between the Bank of Japan's monetary policy and the government's debt management policy.

As interest rates on 10-year bonds rose sharply from the end of 1998, politicians started demanding that the Bank of Japan (BOJ) underwrite new government bond issues—something that had been taboo since the end of the Second World War. In February of 1999, immediately before the Japanese economy bottomed out, the BOJ adopted a Zero Interest Rate Policy with the stated purpose of ensuring an adequate supply of money to offset deflationary pressure. Since the BOJ undertook this monetary policy at the same time that it was under political pressure to underwrite government bonds, there was speculation that the monetary policy and debt management policy were closely related. Moreover, if the Zero Interest Rate Policy were truly aimed at ensuring the adequacy of money supply, it should have started in November 1997 when a number of large financial institutions went bankrupt. A general feeling developed among government bond market participants that monetary policy was part of the political process.

Similarly, it is often suggested that the BOJ's decision to increase its long-term bond purchasing operations is related to the government policy on bond interest rates. In March 2001, the BOJ announced a change in the target of money market operations from overnight interest rates to reserve balances held at the BOJ and said it would increase its long-term bond buying operations from ¥400 billion per month. Some predicted that this measure would lower the interest rate on long-term bonds. But the reason why the BOJ decided to increase purchases of long-term bonds was a technical one; it was not specifically to influence long-term government bond rates. The technical reason was that the BOJ could not achieve its original objective of



increasing free reserves by buying Treasury bills because bids by banks often fell short of BOJ purchase offerings.

### **3) Role of Time-Axis Policy**

Time-axis policy has played an important role in monetary policy since the end of the 1990s. Basically, this policy of appeals to various economic entities to adjust their expectations by promising that the current monetary policy will be maintained until some point in the future such as “up to the time when we can expect that deflationary concerns are eliminated” (from April 13, 1999 to August 11, 2000), or “the time when the rate of increase over the previous year in the national consumer price index except for perishable foods reaches zero in a stable manner” (since March 19, 2001).

Since long-term interest rates are supposed to be an average of expected future short-term interest rates, using a time-axis policy to lower expected future short-term rates can have the effect of lowering long-term rates without increasing long-term bond buying operations. An important difference is that, while increasing long-term bond buying operations is discussed in relation to trends in rates on government bonds, the time-axis policy is adopted in relation to inflation expectations, such as to evade deflation. That is to say, a time-axis policy is a monetary policy, not a government debt management policy.

BOJ's use of time-axis policy supports the argument that increased long-term bond buying operations since August of 2001 should not be interpreted as a government debt management policy, but should be perceived as a technical measure related to monetary adjustment. Specifically, with short-term interest rates having fallen so low that banks viewed short-term government bonds as equivalent to money, bank bids would not cover the entire BOJ offering in Treasury Bill buying operations. In actuality, the decision of the BOJ to increase long-term bond buying operations by 50 percent in August of 2001 did not cause long-term rates to decline, apparently because a time-axis policy had already been introduced in March 2001.

As explained above, it is not correct to say that BOJ used monetary policy to keep interest rates low in order to facilitate the smooth issue of a huge amount of government bonds. As the government continues to issue large amounts of bonds, monetary policy and government debt management policy should be strictly separated in Japan as well. Otherwise, political circles and bond market participants may come to expect that the government and the Bank of Japan will never adopt measures that could lead to higher long-term rates.

### **3. Improved Mechanisms for Government Bond Issuance**

#### **1) JGB Liquidity is Not High**

Issuing a large amount of government bonds smoothly depends on market liquidity (ability to buy or sell instantaneously without significant change in value), not on interest rate maneuvering by the central bank. Ensuring market liquidity is the third guiding principle of US government debt management policy, and it is regarded as an important economic policy task by the United States and by major European nations. This is because high market liquidity in government bond transactions not only allows for the smooth digestion of bonds but also facilitates proper ratings for other financial assets, including corporate bonds and deposits, which leads to improved resource allocation.

Recently, the US government has been promoting concentration of bond issues in the US Treasury (government bond) market, where outstanding volumes are decreasing. It stopped issuing 20-year bonds in 1986, 4-year bonds in 1991, 7-year bonds in 1993 and 3-year bonds in 1998 and it will suspend issuing 30-year bonds from 2002. The government began buying back government bonds with low market liquidity in March 2000. At the same time, it will put 5-year and 10-year bonds that had been issued quarterly together in semi-annual offers. All of these measures are designed to maintain high market liquidity for on-the-run paper (newly issued bonds).

European countries participating in the currency union have issued euro-denominated government bonds since the beginning of 1999. While these countries are coordinating the timing of their issues, they are competing severely with each other to increase the market liquidity of their own bonds. They are seeking to lower rates on their own bonds below rates on others' bonds and thereby reduce the cost of issuing corporate bonds on their domestic markets.

Outstanding volumes in these European countries are generally low. Even Germany's outstanding volume, which is high compared to that of Italy and France, is only one-third that of the United States (OECD, *Economic Outlook*, No.66, 1999). Accordingly, each country is working to increase market liquidity for its government bonds by adopting the reopen system to increase the outstanding volume per issue.

Although 10-year and 30-year bonds are not issued on a regular schedule in the German Bund market, the government is trying to enhance market liquidity by adopting a reopen system. In France, as well, integrated types of long-term bonds are being issued actively to reduce the number of issues and increase the amount per issue. While German government bonds are currently used as the benchmark in the euro market, French bonds have recently been moving close to German bonds.

As it did in the United States and Europe, enhancing market liquidity for government bonds in Japan can be effective not only in ensuring their smooth issuing but also in developing efficient capital markets. Yardsticks to measure market liquidity include the spread between bid and ask prices offered by government bond dealers and the turnover ratio. According to a 1999 Bank for International Settlements (BIS) report on liquidity in government bond markets in major industrialized nations, Japanese government bonds rate poorly in this area compared to other issues (Table 3).

**Table 3. Comparison of Market Liquidity in Major Industrialized Nations**

	US	Japan	Germany	France	Italy	UK	Canada
Bid-ask spread (basis points)							
2-year bonds	1.6	5.0	4.0	4.0	3.0	3.0	2.0
5-year bonds	1.6	9.0	4.0	5.0	5.0	4.0	5.0
10-year bonds	3.1	7.0	4.0	10.0	6.0	4.0	5.0
30-year bonds	3.1	16.0	10.0	24.0	4.0	8.0	10.0
Volume outstanding (\$ billion)	3,457	1,919	563	551	1,100	458	285
Yearly trading volume (\$ billion)	75,901	13,282	N.A.	18,634	8,419	3,222	6,243
Yearly trading volume in futures market (\$ billion)	27,928	18,453	N.A.	N.A.	2,036	3,294	185
Turnover ratio	22.0	6.9	N.A.	33.8	7.7	7.0	21.9
Cash/futures ratio	2.7	0.7	N.A.	N.A.	4.1	1.0	33.7
Number of issues	248	234	115	N.A.	199	82	125
Average issue size (\$ billion)	13.9	8.2	4.9	N.A.	5.5	5.6	2.3
Issue frequency (times per year)	3-12	12.0	2-4	N.A.	1-4	0.5-1	0.5-2

*Notes:* (1) Bid-ask spread is the difference between the bid price and the ask price in the dealer market for \$10-million lots of benchmark issues for each maturity (one basis point = 0.01%);  
(2) government bond outstanding volumes as of the end of 1997 and trading volumes on a two-way basis (calculated using exchange rates at the end of 1997);  
(3) turnover ratio = cash trading volumes (on a two-way basis) / outstanding volumes; cash/futures ratio = cash trading volumes / futures trading volumes;  
(4) average issue size = outstanding volumes / number of issues; average annual number of offers is for maturities in which benchmark issues are included, excluding short-term bonds with maturities of one year or shorter.

*Source:* BIS, "Market Liquidity: Research Findings and Selected Policy Implications," 1999.

According to the BIS questionnaire survey, the bid-ask spread is highest for Japanese bond markets in terms of all maturities. For the most recent issue of Japanese 10-year bonds (the largest issue amount on the market), the bid-ask spread is 0.07 percent (seven basis points) of face value, which is significantly higher than the spread for its US counterpart (0.03 percent). Japan's bid-ask spreads are also generally higher than those in Germany, the UK, Canada, and Italy.

In addition, the turnover ratio (ratio of yearly government bond trading volume to outstanding volumes) as a liquidity index is relatively low (about seven times) for Japan compared to Canada, France, the US, and Italy. Moreover, bond trading in Japan is characterized by concentration in long-maturity segments (7-year to 10-year issues). Unlike in other advanced nations, in Japan futures trading is far more active than cash trading and 10-year bonds are also the main actor in such futures transactions.

## **2) Efficiency of Government Bond Markets**

Following the drastic increases in government bond issues since 1998, the JGB market saw considerable improvements from 1999 onward as shown in Table 4. The following examination of these improvements starts with the taxation system.

The securities transaction tax was abolished at the end of March 1999. As this tax was levied on the value of each securities transaction regardless of how long investors held a security, it was a disincentive to trading bonds as long as the increase in bond prices did not exceed the amount of the tax. As a result, the tax put a heavy burden on both investors and bond dealers. The eventual abolition of this tax, which was achieved after long discussions, significantly improved the liquidity of the government bond market in Japan, finally putting it on an equal footing with the government bond markets in the US and advanced European countries. In addition, the abolition of the stock-exchange tax had the same effect on trading in the futures markets in Japan as the abolition of the securities transaction tax had on trading in the cash markets.

The 18 percent withholding tax on redemption profits when TBs (Treasury bills placed to refinance government bonds) are issued was abolished in April 1999. In September of the same year, non-residents became exempt from withholding tax on government bond interest under certain conditions.

The range of maturities for government bonds has expanded. One-year TBs were introduced in April 1999, followed by the introduction of a public auction system for 30-year bonds in September of the same year. Finally, 5-year bonds were issued in February 2000, following a long debate over whether they would compete with 5-year bank debentures. The constraint on issuing 5-year bonds became meaningless in recent years. Two of the long-term credit banks that had been the main issuers of bank debentures went bankrupt and the term remaining until maturity on the large volume of 10-year government bonds that had been issued in the past was approaching five years.

**Table 4. Recent Improvements in the Japanese Government Bond Market**

1999	January	<ul style="list-style-type: none"> <li>• Early redemption provision abolished</li> </ul>
	March	<ul style="list-style-type: none"> <li>• Advance announcement of JGB auction schedules and issuance amounts started</li> </ul>
	April	<ul style="list-style-type: none"> <li>• Securities transaction tax and exchange tax abolished</li> <li>• Redemption profits for TB and FB issues exempted from withholding tax</li> <li>• FB public auction system started</li> <li>• One-year TB public auction started</li> </ul>
	September	<ul style="list-style-type: none"> <li>• Non-residents exempted from withholding tax on bond interest under certain conditions</li> </ul>
	November	<ul style="list-style-type: none"> <li>• Public auction started for 30-year bonds</li> <li>• MOF website started an informational dialog box “What do you know about government bonds?”</li> </ul>
2000	February	<ul style="list-style-type: none"> <li>• Public auction for 5-year bonds started</li> <li>• Newspaper ads on JGBs resumed</li> </ul>
	April	<ul style="list-style-type: none"> <li>• Auction results to be announced 30 minutes earlier</li> </ul>
	June	<ul style="list-style-type: none"> <li>• Public auction for 15-year floating-rate bonds started</li> </ul>
	November	<ul style="list-style-type: none"> <li>• Public auction for 3-year discount bonds started (5-year discount bonds discontinued)</li> </ul>
2001	January	<ul style="list-style-type: none"> <li>• Real-time gross settlement (RTGS) of government bonds and “fail practice” introduced</li> </ul>
	March	<ul style="list-style-type: none"> <li>• Reopen system (real-time issue integration) introduced</li> </ul>
	April	<ul style="list-style-type: none"> <li>• Tax exemption for non-residents expanded</li> </ul>
	May	<ul style="list-style-type: none"> <li>• Auction results to be announced 30 minutes earlier (13:30 rather than 14:00).</li> </ul>
	June	<ul style="list-style-type: none"> <li>• Unit for TB and FB auction applications changed (from 5 <i>rin</i> to 1 <i>rin</i> for TBs and from 1 <i>rin</i> to 5 <i>mo</i> for FBs)</li> </ul>

*Note:* FB (financing bills) = short-term government bonds issued to raise funding to support foreign exchange market intervention; TB (treasury bills) = short-term discount bonds issued to refund maturing government bonds.

*Source:* Nomura Research Institute.

While the initial plan envisioned the issuance of ¥800 billion per month in 5-year bonds, the issuance plan for fiscal 2001 combined 4- and 6-year bonds with 5-year bonds and the integrated issue became a benchmark for medium-term bonds to ensure liquidity. It was determined to expand these new benchmark bond issues to between ¥1.5 trillion and ¥1.6 trillion per month. Accordingly, 2-, 5- and 10-year bonds have become benchmark issues in Japan as well.

Another market improvement was the advance announcement of auction schedules and planned issue amounts which was started in March 1999. Quarterly auction schedules for each type of government bond in each quarter are disclosed in the middle of the month preceding that in which the auctions are scheduled. This measure has increased the ability of market participants to evaluate future bond issues.

Furthermore, the issuance of 10-year bonds has been carried out under the reopen system since March 2001. This has allowed the government to combine bonds of certain maturities into a large issue even if the monthly placement amount is limited.

It is expected that this will enhance liquidity for current issues (bonds issued in the immediate past).

Previously, government bonds could be integrated only after their first interest payments were completed, because bonds with the same coupon and redemption date have different interest payment amounts depending on the month in which they are issued. Starting from March 2001, however, the first interest payment date for all interest-bearing bonds is set at six months after the release of a specified issue, regardless of the actual time such bonds are held. If an investor purchases a type of bond and the initial interest payment is expected to come before the first interest payment date, the investor must pay the treasury an amount equal to the interest for the period between this payment date and the actual payment date at the time the bond is issued. This measure has made it possible for the government to integrate new issues into other issues immediately after a new release. For instance, 10-year bonds issued in May of 2001 were immediately combined with the same type of bonds issued in March of the same year.

In the past, differences in size of bond issues led to a lack of substitutability among them. Equalizing the sizes of diverse issues by combining bonds may increase their market liquidity and at the same time promote the appearance of benchmark bonds involving large amounts. In addition, the introduction of the real-time gross settlement system from 2001 and the adoption of a shorter required settlement period will improve the settlement infrastructure.

The use of strip bonds (a type of bond in which interest and principal can be separated for transactions and subsequently combined again) is now under consideration for introduction as early as fiscal 2002. This increases cash flow options for investors as the strip bonds can be compared with interest-bearing bonds.

### **3) Rapid Expansion of Short-Term Bond Markets**

Short-term bill markets have also shown rapid developments since 1999. Short-term bills include financing bills (FBs), which are mainly issued to finance foreign exchange market interventions, and treasury bills (TBs), which are discount government bonds issued by the Debt Consolidation Fund to permit smooth refunding of previous issues that are reaching their maturities.

Periodic issues of three-month financing bills through price auctions started in April 1999. In the past, these bills had been issued by public offering at interest rates slightly below the official discount rate, with the Bank of Japan underwriting

unsolicited amounts. The process was changed so that auctions are held regularly every Wednesday and payments are made on the following Monday.

The amount of financing bills issued at one time has been expanded from ¥1 trillion in April 1994 to ¥3.9 trillion in April 2000, reflecting increased intervention in the foreign exchange market and added fund-raising needs of the treasury. Treasury bills with a 6-month maturity were issued in February 1986, followed by ones with 3-month maturity in September 1989 and 1-year maturity in April 1999. The issuance of 3-month treasury bills was suspended from fiscal 2000 in favor of financing bills. Only 6-month and 1-year bills have since been issued on a monthly basis, at a level of ¥2 trillion and ¥1.2 trillion, respectively.

Under these circumstances, the outstanding volume of short-term government securities (TBs and FBs) has grown from ¥35.1 trillion at the end of March 1999 to ¥72.5 trillion at the end of March 2000 and to ¥81 trillion at the end of March 2001. The outstanding volume of short-term government securities now exceeds the outstanding volume of calls, promissory notes, commercial paper, and negotiable deposits.

With the start of the FB public auction system, FB transaction volume increased rapidly from only ¥2.4 trillion in 1998 to ¥1,085 trillion in 1999 and it has exceeded TB transaction volume since the end of 1999. Transactions in TB and FB issues mainly involve *gensaki* trades (trades involving repurchase or resale agreements after a certain period). The *gensaki* market is continuing to expand, as investors find it an easy venue for selling or purchasing a large amount of short-term bonds at one time. Bond dealers see it is a market where they can raise funds by selling their own positions in short-term bonds to meet investor demands.

As the trading volume in short-term bond markets has gradually increased, the Bank of Japan has started to use these markets for money market operations. While the BOJ had purchased considerable sums in company-issued notes in the past, the volume of such purchases has been declining recently. Moreover, *gensaki* commercial paper operations have also been reduced, as such transactions require the delivery of the securities themselves and the Bank of Japan has to assume credit risk. As an alternative, BOJ has been shifting its focus in money market operations to *gensaki* purchases of short-term government securities. Money markets tend to hold considerable amounts in short-term bonds (which carry no credit risk) as collateral for unexpected monetary demands and they use the BOJ's *gensaki* purchase operations as a means of raising funds.

Short-term government securities have secured a core position in the money market as a product with a high liquidity. In October 1999 the Bank of Japan approved these issues as an instrument for its outright bond purchasing operations in addition to using them for *gensaki* purchase operations. These bonds were used to provide funds to deal with the Y2K problems.

Along with its determination to reduce the official discount rate to 0.35 percent, on February 9, 2001 the Bank of Japan decided to actively use the outright purchase of short-term government securities in place of *gensaki* operations because of the possible impact that repayment would have on the markets. On February 23, outright purchase operations involving short-term government securities were implemented. On February 20, outright purchases of ¥200 billion were also carried out for one-year short-term bills issued on the same day.

## **4. Distorted Ownership of Japanese Government Bonds**

### **1) Concentration Among Private Banks and Public Agencies**

The market liquidity of Japanese government bonds will be enhanced by the various changes on the issuing side described above. Another factor that may affect their liquidity is the distribution of ownership. Unlike the situation in the United States, ownership of Japanese government bonds is concentrated among private banks and public agencies with non-residents and households owning only minor amounts.

Table 5 compares bond ownership in Japan and the United States at the end of March 2001. For Japan, outstanding volume includes government bonds and short-term securities; for the United States, the total amount excludes non-marketable bonds owned by the social security program. The ownership share of private banks in Japan is very high (27.8 percent) compared to that in the United States (5.1 percent). Moreover, foreign banks comprise 2.9 percentage points of the 5.1-percent private bank ownership ratio for the US, with private US banks owning only the remaining 2.2 percentage points. In addition, government bonds comprise merely 1.5 percent of the gross financial assets of US banks, indicating that these banks own government securities only for securing market liquidity. In contrast, government bonds account for 11.2 percent of financial assets of domestic banks in Japan.

Is it possible for Japan to sustain in the future a structure in which private banks with a lower credit rating than the government own a large amount of government bonds that carry no credit risk? Measures to increase the ownership of government bonds by individuals (households) should be seriously studied in order to ensure the smooth and secure absorption of government bonds. For example, in the United



States US savings bonds have been offered over the Internet since 1998 and holdings of these bonds now comprise 5.5 percentage points of the 8.1 percent of US government bonds owned by individuals.

In Japan, an extremely high proportion of government bonds, over 30 percent, is in the hands of the public sector. In the United States, by contrast, the public sector share of ownership is under eight percent. This difference is too large to be attributed to differences in definition of the categories. In Table 5 the "general government" category includes holdings of the social security (public pension) system in the case of Japan but not in the case of the United States, where the social security program holds non-marketable government bonds.

The "other public sector" ownership category in Table 5 in the case of Japan includes holdings of the postal savings, postal life insurance, MOF Trust Fund Bureau, and government agencies. These agencies own slightly less than 30 percent of all government bonds outstanding. The public sector's ownership share in the future will likely be strongly affected by the FILP reforms, as holdings under FILP funds (the former MOF Trust Fund Bureau) will decline significantly from 16.7 percent as of the end of March 2001. It is expected that the FILP system will not hold a large amount of government bonds in excess of its asset and liability management needs, because it has to issue FILP bonds to raise the long-term funding for FILP plans.

In the United States, government agencies are not permitted to participate in government bond markets as large-scale investors and social security funds can only operate through non-marketable government bonds. On the other hand, in Japan, the postal savings, postal life insurance, and public pension agencies have recently undertaken their own fund management. These agencies plan to increase the share of foreign stocks and bonds in their portfolios by reducing the share of loans to the Trust Fund Bureau, which are equivalent to non-marketable government securities.

**Table 5. Distribution of Government Bond Holdings in Japan and the United States (End of March 2001)**

	Japan %	US %
Central bank	10.7	15.5
Private financial institutions	46.8	33.2
Private banks	27.8	5.1
Life and non-life insurance funds, pension funds	12.0	14.7
Other financial institutions	7.1	13.4
Non-financial corporations	0.2	0.4
Households	2.3	8.1
Private non-profit organizations	1.8	0.5
Overseas	5.7	34.7
Public Sector		
General government	2.7	6.9
Other public sector	29.8	0.7
Outstanding volume (trillions)	¥463.7	\$3.382

*Notes:* (1) The outstanding volume of Japanese government bonds includes government bonds and financing bills. The outstanding US volume excludes non-marketable bonds owned by the federal government pension system. (2) US household holdings include savings bonds. (3) US life and non-life insurance and pension funds include individual pension funds and state and local employee retirement funds. (4) Japanese public sector includes postal savings, postal life insurance, the MOF Trust Fund Bureau, and government-related financial institutions. US public sector includes state and local governments and government-supported corporations. (5) The general government account for Japan includes social security funds as they hold marketable bonds, but US social security funds are excluded from this table as they hold non-marketable government bonds (\$2.087 trillion outstanding volume at the end of September 2000).

*Source:* Bank of Japan, "Monthly Report of Recent Economic and Financial Developments;" and FRB, "Flow of Funds Accounts of the United States."

## **2) Limited Non-Resident Ownership of JGBs**

With ownership of government bonds concentrated among private banks and public agencies in Japan, non-residents hold only a comparatively small share. JGBs have attracted increasing attention from non-resident investors as the JGB share in the global index rose as a result of the rapid increases in outstanding volume. Nevertheless, as seen in Table 5, non-residents own less than 6 percent of total outstanding government bonds in Japan, compared to about 35 percent for the United States.

According to a BIS survey of G10 countries at the end of 1997, non-residents held 37.4 percent of all bonds issued in Germany, and between 20 percent and 25 percent of government bonds issued by Canada, the Netherlands, Belgium, and Italy. For Sweden, the UK, and France the shares were 19.5 percent, 14.4 percent, and 12.9 percent, respectively.

What is the reason behind the low ratio of Japanese government bonds held by non-residents? Let's examine this from the viewpoints of currency internationalization and bond market liquidity.

According to an April 2001 BIS survey, worldwide foreign exchange trading volume was \$1.2 trillion per day, and the US dollar was used in 90 percent of this trading. Trading between currencies other than the US dollar accounted for only 10 percent, and trades between the yen and the euro or the euro and pound sterling represented only 2 to 3 percent of the total. This is because transactions between currencies other than the US dollar can be conducted at lower costs if the currencies are first converted to US dollars before the actual transaction.

The scale of foreign exchange transactions has now reached 40 times the total of world exports and imports. With many countries liberalizing capital transactions, the volume of these transactions has increased rapidly, leading to a huge expansion in foreign exchange trading. Accordingly, examining currency transactions only from the viewpoint of trade in goods risks misunderstanding the essential nature of international currencies.

International capital flows still remain at some 2 to 3 percent of world GDP, which corresponds to the imbalance in the international balance of payments on a net basis. This means that foreign investments by individual countries do not differ largely from the scale of their domestic savings, despite the liberalization of capital movements. From this viewpoint, we can conclude that movements of capital today are less active than they were before the First World War.

However, if we look into capital inflows and outflows in terms of gross transaction volumes involving both acquisition and disposal totals, it is clear that the scale of capital movements of a single country is so huge as to exceed the size of its GDP. This may be attributed to the behavior of a large number of investors who try to enhance investment returns and reduce transaction risk by repeatedly acquiring and disposing of foreign securities, especially foreign government bonds. The development of information processing and communications technologies has reduced transactions costs, and the innovation of derivative techniques has made it possible to shift various risks. Both of these trends have significantly promoted the movement of capital across national borders.

According to the 69th and 70th annual reports of the BIS, for the United States the gross in- and out-flow of securities investments was 2.3 times its GDP in 1998 and 1.8 times in 1999. Similar figures for Germany were 2.5 times 1997 GDP and 3.3 times 1998 GDP, and for France these flows amounted to 3 to 4 times GDP in the two years.

Conversely, in Japan gross capital movements totaled only 91 percent of GDP in 1998 and 85 percent of GDP in 1999—figures that are relatively small compared to those of other countries.

Moreover, the majority of Japan's capital movement is outflow, and the amount of capital inflow remains very small even on a gross basis. This clearly suggests that transactions in Japanese government bonds by non-residents are not active. In the United States, on the other hand, both inflows and outflows of capital have been quite active and the scale has been growing year by year. In particular, investments in domestic securities centering on US Treasury securities have increased to a huge extent.

In addition to international capital flows, derivative transactions are very active as they can easily transfer risk across national borders. According to an April 2000 survey, derivative transactions now amount to \$556 billion per day, or \$140 trillion per year.

Large-scale capital movements are carried out using the financial and capital markets of countries that provide financial services most efficiently and using currencies and markets with the lowest transaction costs. Indeed, these tendencies exert further pressure to lower costs. As a result, the US dollar has become the most favored currency, as it is used most frequently in world markets. Although currencies are used as legal tender in their home countries, international transactions prefer currencies that meet the needs of markets most efficiently. The principle is the same as that used in selecting a language for conversation with foreigners.

Why has the US dollar been able to maintain its dominant position as the international currency, despite the downward trend in its value against other major currencies? This can be attributed to the economies of scale gained through widespread use at low cost in government bond markets.

## **5. Enhancing Liquidity in Government Bond Markets**

### **1) Factors Preventing Improved Liquidity in JGB Markets**

Japan's debt management policy should be reconstructed by relying on the essential characteristics of government bonds—namely, their credit risk free status and their high market liquidity. This chapter discusses how to enhance market liquidity of JGBs.

The United States has maintained the market liquidity of government bonds in the face of a declining volume of outstanding bonds by integrating them into several benchmark issues. Enhancing domestic market liquidity is also a priority in Europe as participants in the euro currency compete to reduce the cost of issuing corporate debentures in domestic capital markets.

Japan is making progress in the reform of government bond issuing conditions, such as adopting the benchmark and the reopen systems, to improve market liquidity, but several remaining factors hamper the diversification of market participation and the enhancement of market liquidity. Specifically, these factors are differential withholding tax on bonds depending on ownership and the separation of government bond markets by custody and settlement methods.

There are still about three hundred government bond issues in Japan. Furthermore, these issues can be categorized into at least twelve types according to withholding tax treatment, custody method, and whether they are subject to real- or designated-time settlement. This means that government bond transactions are being carried out in at least 3,600 procedural combinations, leading to cumbersome operations that increase systematization and transaction costs. All of these factors present obstacles to enhancing market liquidity.

## **2) Eliminating Withholding Tax on Interest**

In principle, interest revenues are subject to withholding tax in Japan. Yet, the exceptions are numerous. They include designated financial institutions such as banks, securities companies, insurance companies, agricultural cooperatives, credit unions and credit associations, as well as tax-exempt corporations, including special corporations as specified in Appendix 1 of the Income Tax Law, government agencies, foundations, corporate judicial persons, educational foundations, and religious foundations.

Moreover, withholding taxes are levied on the total amount of interest paid while tax credits are allowed only for interest accrued during the period the bond is held. Therefore, if a company purchases a government bond on a day other than the day on which interest is paid, the tax liability is greater than the tax credit, which lowers the yield on the bond. The market will take this into account, reducing the company's proceeds when it sells the bond. Accordingly, bond markets are divided between taxed transactions and tax-exempt transactions, such as transactions between banks, for instance.

The withholding tax on interest should be eliminated for non-financial corporations that satisfy certain standard conditions and separate treatment should be established for individual investors.

One of the main factors keeping non-residents from holding Japanese government bonds and working against the internationalization of the yen is the 15-percent withholding tax that is independently levied on interest. In other major advanced countries, such interest revenues are tax-exempt if the identification of the owner is confirmed.

To address this problem, since September 1999 Japan has exempted interest paid to non-residents from withholding tax if the identification of the payee is confirmed by a domestic sales office of a financial institution participating in the clearing system (which allows transferring securities ownership between accounts established at the Bank of Japan) and the bonds are registered on an integrated basis with such financial institutions.

Originally non-residents who held government bonds through global custodians (depository organizations handling custodial and settlement procedures for securities issued in various countries in the world) were not eligible for this withholding tax exemption, but this limitation was removed starting in fiscal 2001. The exemption procedures described above were expanded to include overseas investors who own Japanese government bonds through qualified foreign intermediaries, if these global custodians meet certain requirements established by the Japanese government. These requirements essentially mean that the Bank of Japan and the superintendent of a relevant taxation office must approve such custodians. Global custodians must directly or indirectly deposit government bonds with domestic financial institutions and also deposit bonds registered on an integrated basis with the Bank of Japan. In addition, the superintendent of the applicable tax office must approve any global custodian that confirms the identification of non-resident bond owners in order to ensure proper taxation.

This system was further expanded in April 2001 to include non-residents who own Japanese government bonds through multiple global custodians. In addition, Euro-Clear, the firm that handles US, German, and UK government bonds, was added to the list of qualified foreign intermediaries. It is expected that these measures will encourage overseas investors to purchase Japanese government bonds.

### **3) Reforms in Government Bond Custody and Settlement Systems**

Japanese government bond markets are also divided into three sections—bearer bonds, registered bonds, and central clearing bonds—depending on the custody and settlement schemes involved. Although most Japanese government bonds are issued as paperless securities, small amounts of physical certificates in the form of bearer bonds are still issued. The use of bearer bonds disappeared in 1983 in the United States, in 1984 in France, and in 1987 in the United Kingdom.

The majority of JGBs issued as paperless securities are classified into two types—registered bonds and central clearing bonds. For bonds issued under the registration system (introduced in 1906) owners must directly register their names with the BOJ whenever the bonds are bought or sold. Bonds issued as central clearing bonds (introduced in 1980) use a book transfer system whereby owners register the bonds under the name of the Bank of Japan on an integrated basis through direct participants who have BOJ accounts.

Thus, the withholding tax and custody settlement systems described thus far differentiate Japanese government bonds into at least six types. This complexity hinders the overall liquidity of the government bond market. Furthermore, this system encourages the concentration of government bond ownership in financial institutions, which are not encumbered by the taxation and settlement obstacles.

It is recommended that the withholding tax on bond interest payments be reviewed, as it impairs market liquidity by dividing government bond markets into several sections. Moreover, bearer bonds and registered bonds should be integrated into central clearing bonds in order to reduce the time between transaction agreements and actual settlement by shifting from the T+3 system (settlement on the third day after the transaction, adopted in April 1997) to the T+1 system (settlement on the day following the transaction, which is used by the US, the UK, and other major advanced countries).

The foregoing analysis suggests three specific ways to improve Japan's government debt management system:

- (1) Improve the owner identification system in the current withholding tax exemption system for non-resident investors.
- (2) Exempt business corporations from withholding tax on bond interest.
- (3) Realize a completely paperless system for government bonds (by integrating bearer bonds and registered bonds into central clearing bonds).

## 6. Important Considerations Regarding Credit Risk

### 1) Why do Japanese Households Prefer Bank and Postal Savings Deposits?

Japanese households are said to be risk-averse, as they prefer to hold their financial assets as bank and postal savings deposits. Is this phenomenon rooted in Japan's history and culture?

Actually, this preference can be explained by basic asset pricing theory, which says that when safe assets exist, the optimum combination of risky assets is determined independent from investors' preferences.

Figure 1 summarizes the household's selection of an optimum portfolio, with risks for financial assets (standard deviations for returns) on the horizontal axis and expected returns on the vertical axis. The straight line moving to the upper right indicates the capital market alternatives, ranging from a government bond interest rate (risk-free rate) to the return on a risky asset with default risk. Given the household's preferences shown by the indifference curves, under normal circumstances, the optimum portfolio is shown by A.

Since 1998 the Japanese government has provided an explicit guarantee for all bank deposits as a temporary financial stabilization measure. In normal circumstances premiums on deposit insurance to protect depositors against bank failure lower the return on bank deposits, but with the government guarantee, savings deposits offer households the same zero-risk status as the safe asset, and they offer higher return. For example, TB and FB issues offer interest rates of only around 0.002 percent while the rate for ordinary bank deposits stands at about 0.02 percent—even though banks' need to attract deposits has been low given the weak credit demand and the shortage of credit-worthy borrowers. Thus, as a consequence of government guarantees, Japanese households can realize zero risk and higher return if they select bank deposits and not government bonds.

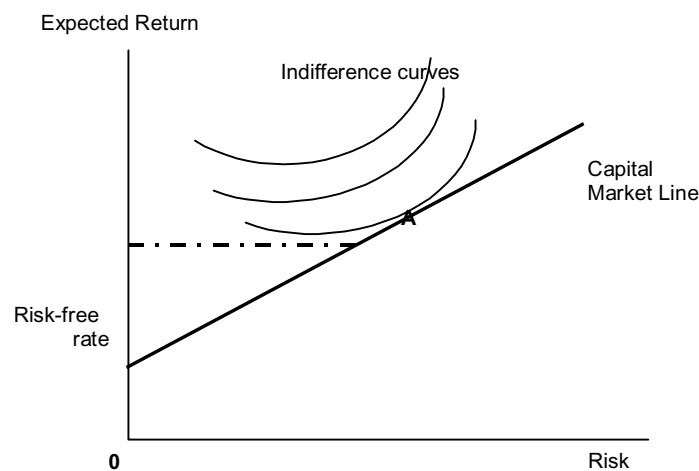
The implications of these credit-risk interventions on portfolio selection can be seen in Figure 1. The dotted line refraction of the capital market line indicates how the government guarantee alters the capital market alternatives available to households (i.e., there are now some assets with zero-risk and higher-than-government-bond returns). This suggests why in the aggregate Japanese households keep a higher proportion of their overall financial portfolios in bank deposits than do households in other advanced countries. By and large the only



Japanese households that choose to hold JGBs are elderly citizens who are exempt from income tax on the interest on such holdings up to 3.5 million yen.

Moreover, the relationship between the capital market line and the indifference curves in Figure 1 also makes clear that a government guarantee on bank deposits discourages households from investing in corporate equities, which carry higher risk than deposits. Thus, the existence of bank deposits as a safe asset under the government guarantees explains the lower proportion of marketable securities, such as bonds and stocks, in the asset holdings of Japanese households.

**Figure 1. Optimum Portfolio Selection with Safe and Risky Assets**



Source: Nomura Research Institute.

Since Japanese households' preference for bank and postal savings deposits can be explained by the implied or express government guarantees on these assets, it should not be attributed to cultural differences. Japanese citizens consider such guarantees a reasonable addition to the comprehensive safety net that the government adopted as a temporary exceptional measure after the failure of several banks in the 1990s. They also accept the myth fostered by the post-war convoy administration system that the government will never allow banks to collapse.

In the United States, on the other hand, interest rates on bank deposits differ from the risk-free rate on government bonds in reflection of banks' deposit insurance premiums and financing needs. The risk-free rate on government bonds is the basis for the determination for other interest rates. The rate on money market funds (MMFs) takes into account their additional credit risk and lower market liquidity compared to government bonds:

MMF rate = government bond rate + credit risk premiums for  
certificates of deposit and commercial paper

Each bank determines its own deposit rates based on the MMF rate by factoring in its costs and financing needs:

Deposit rate = MMF rate – deposit insurance premium +/- financing needs

Thus, in the US interest rates on bank deposits are lower than the MMF rate by an amount equal to deposit insurance premiums, and may be lower still if banks lack positive need to attract large amounts of deposits.

## **2) Credit Risk Intervention Should be Limited**

Credit-risk intervention by the government affects the overall financial structure and forces fund operators and bond issuers to select from a limited range of reasonable actions. Because explicit and implicit guarantees on bank deposits encourage household ownership of bank and postal savings deposits by making them a risk-free financial asset, ownership of government bonds has become concentrated among banks and the public sector. As noted earlier, it is difficult to believe that huge government bond holdings by banks whose credit ratings are lower than that of the government can be sustained in the future.

Furthermore, Japan's government bond issuance procedures still involve a partial syndicate system for underwriting government bonds, something that is not found in other advanced countries. Syndicate underwriters are responsible for underwriting government bonds at average contract prices formed by government bond auctions and have to purchase any bonds that are not sold at auction.

Syndicate underwriters, which consist mainly of private banks, are believed to exist to ensure the full placement of government issues. Implicit or express government guarantees on bank deposits interfere with the government's ability to issue government bonds smoothly at all times. Because of the guarantees, government bonds' importance as risk-free assets cannot always be clearly demonstrated to investors. Therefore, in exchange for deposit protection measures, banks form underwriting syndicates to facilitate the placement of government issues.

To enhance the working of the market mechanism at the time government bonds are issued the current government bond allocation system based on syndicate underwriting should be revised. To this end, the government should abolish the full-deposit protection system in which shortages in deposit insurance premiums are covered by taxes and it should lift the freeze on the pay-off system.

It is often believed that economic activities will be encouraged if the government guarantees the credit exposure of funding institutions such as banks, government agencies, local communities, and small and medium-sized companies. Certainly, these institutions could take larger risks if the government provided a guarantee. Investors may also profit by investing in financial products that carry government guarantees.

For the nation's economy as a whole, however, risks may increase when the government guarantees credit exposure, because such provisions merely transfer risk from funding institutions and investors to the taxpayer, which leads to a loosening of market discipline. Investors would tend to avoid rigorous risk calculations if they could make investments without assuming risk, since the relevant party is not responsible for the costs associated with unfruitful economic activities. Thus, the risk-allocation function of markets will decline and economic growth will be hindered.

Moreover, if the government becomes joint surety to a number of economic institutions, the credibility of the nation itself may decline. Currently, Japanese government bonds pay higher interest to investors than do yen-denominated Italian government bonds. This may be attributed not only to the accumulation of outstanding Japanese government bonds but also to the rapid increases in off-balance sheet liabilities of the Japanese government, which provide credit to a wide range of economic institutions.

In the past, Japan did not sufficiently recognize variations in credit risk among debtors and it failed to adequately understand the essential feature of government bonds—that they are risk-free. The wide range of credit risk and the risk-free nature of government bonds will gradually become clear as bank failures and bankruptcies among corporate bond issuers rise, as reforms in special public corporations and local government financial systems continue, and as pay-off restrictions are lifted.

What must happen now is to strictly limit government intervention in credit risk through express or implied guarantees. When the market mechanism is allowed to apply in this way, then interest rates in financial and capital markets will properly reflect variations in credit risk across the entire range of debt (financial assets) starting

with government bonds. For this to happen, government debt management policy must be redefined to concentrate and limit government guarantees on government bonds.