

Why Overcoming Deflation is Crucial to Fiscal Restructuring

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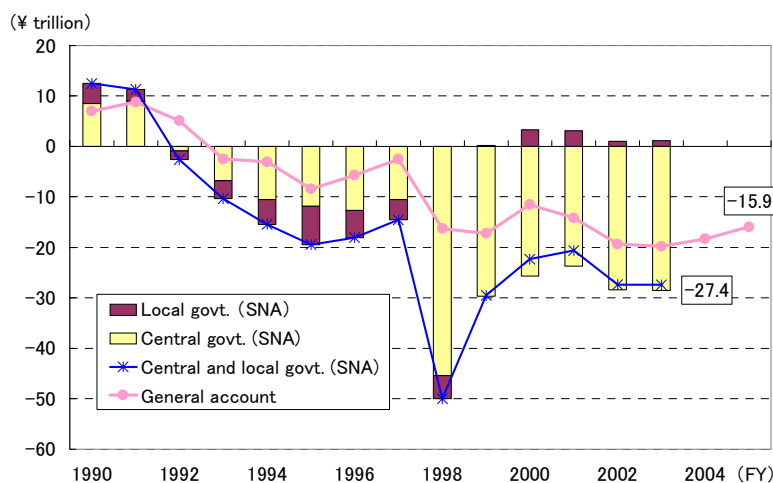
Japan's public sector debt as a percentage of nominal GDP is the largest among advanced economies. To reduce the debt ratio, the government aims to achieve a primary surplus by the early 2010s. However, fiscal restructuring will also require overcoming deflation so that the nominal GDP growth rate can accelerate.

1. Introduction

Japan's deteriorating fiscal condition has been a serious concern for many years. In the initial budget for fiscal year 2005, general account expenditures amounted to ¥82.2 trillion, of which ¥34.4 trillion must be financed by debt. Moreover, as a ratio to nominal GDP, Japan's outstanding public debt is the largest among advanced economies, and continues to grow.

In the name of fiscal restructuring—defined here as reducing the amount of general bonds outstanding as a ratio to nominal GDP—the government aims to achieve a surplus in the primary balance by the early 2010s. The primary balance refers to the general account balance excluding debt service (interest payment and debt redemption) on the expenditure side, and bond revenues on the revenue side. If the primary balance is zero for a given year, then all policy expenditures are financed by tax revenues, and bond revenues are needed only to service the debt. Moreover, if the conditions described below are met, the public debt will cease to grow as a ratio to nominal GDP.

Figure 1 Primary Balances of Central and Local Government



Sources: Cabinet Office, Ministry of Finance

In fiscal 2003, the combined primary balance of central and local governments showed a deficit of ¥27.4 trillion. The central government's general account alone posted a ¥15.9 trillion primary deficit in the most recent fiscal year of 2005 (Figure 1).

Eliminating the primary deficit is clearly the first step toward fiscal restructuring. Important as it is, however, the primary balance is only part of the solution. This is because debt service—which is outside of the primary balance—must continue on the outstanding debt. As long as the nominal interest rate exceeds the nominal GDP growth rate, the interest burden—which is debt financed—will grow faster than nominal GDP, and further increase the debt ratio. In other words, fiscal restructuring requires not only achieving a primary surplus (nonnegative balance), but accelerating the growth of nominal GDP.

However, due in part to deflation, nominal GDP growth has faltered in recent years, frequently turning negative. In this paper, we examine the current fiscal conditions and public indebtedness, and argue that overcoming deflation is crucial to accelerate nominal GDP growth and succeed in fiscal restructuring.

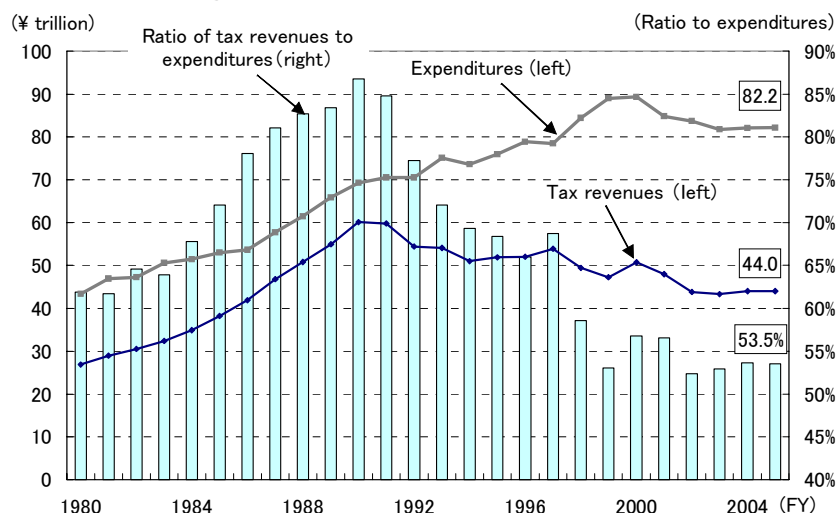
2. The Sustained Fiscal Deficit

1. Slumping Tax Revenues

In the initial budget for fiscal 2005, the general account showed a deficit of ¥34.4 trillion, of which the primary balance comprised a deficit of ¥15.9 trillion. The main cause of the government's sustained fiscal deficit in recent years has been a slump in tax revenues. In the initial budget for fiscal 2005, tax revenues were ¥44.0 trillion, enough to cover only 53.5% of the ¥82.2 trillion in expenditures (Figure 2).

Tax revenues have not always been dwarfed by expenditures. Back in 1990, tax revenues financed as much as 86.8% of expenditures. But as a result of the persistent recession and deflation, along with tax cuts intended to stimulate the economy, tax revenues fell from ¥60.1 trillion in 1990 to approximately ¥16 trillion.

Figure 2 Revenues and Expenditures

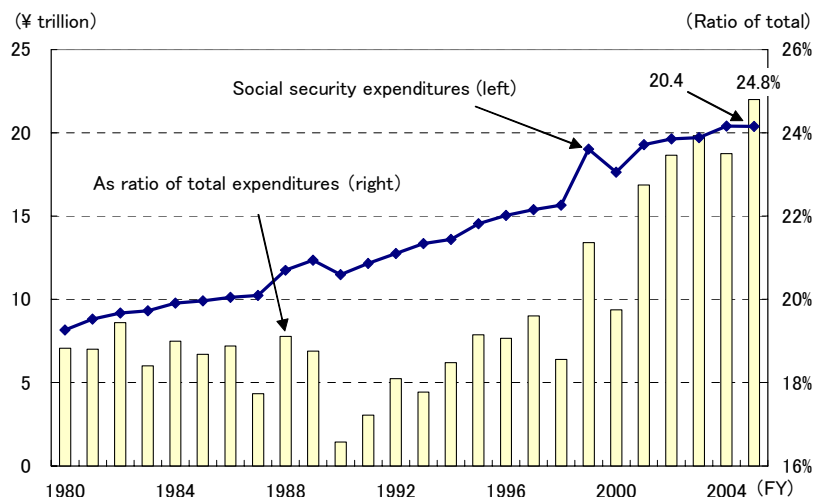


Source: MOF

2. Limited Spending Cuts

Another cause of the sustained fiscal deficit has been the difficulty in cutting expenditures. The initial budget for fiscal 2005 contains ¥82.2 trillion in expenditures, which is not significantly less than the peak of ¥89 trillion reached in fiscal 1999 and 2000.

Figure 3 Social Security Expenditures



Source: MOF

The largest component of the general account is social security expenditures, which comprised one-fourth or ¥20.4 trillion of the total fiscal 2005 initial budget. This category has grown consistently from ¥11.5 trillion in 1990. The natural growth of these entitlement expenditures has been the main impediment to spending cuts (Figure 3).

Looking ahead, the aging population clearly portends sharp growth in social security benefits.

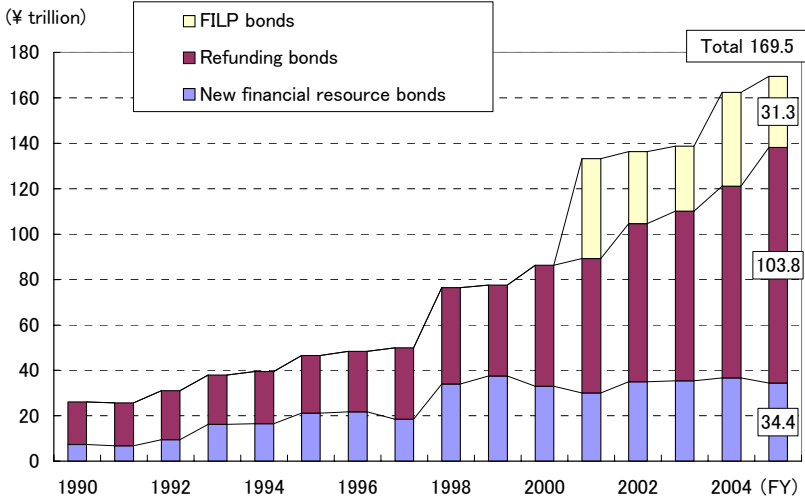
Since benefits are partly funded from the general account, their inevitable growth implies that spending cuts will remain difficult at best.

3. Growth of Public Debt

1. Status of Bond Issuance

Since general account expenditures continually exceed tax revenues year after year, the government must resort to debt financing. In fiscal 2005, planned issuance of new financial resource bonds—general bonds consisting of construction bonds and special deficit-financing bonds—is estimated at ¥34.4 trillion. This is roughly 4.7 times the 1990 bond issuance of ¥7.3 trillion (Figure 4).

Figure 4 JGB Issuance



Note: Revenue basis
Source: MOF

Issuance of another type of general bond—refunding bonds for the purpose of redeeming previously issued debt—is expected to reach ¥103.8 trillion, outpacing by far the growth of new financial resource bonds.

Besides general bonds, another category of JGBs are fiscal loan bonds, issued since fiscal 2001 to fund the Fiscal Investment and Loan Program (FILP). In fiscal 2005, issuance of new financial resource bonds and refunding bonds amounted to ¥138.2 trillion; including fiscal loan bonds, the total reaches ¥169.5 trillion. Compared to the total bond issuance of ¥26.5 trillion in fiscal 1990, this represents over a six-fold increase.

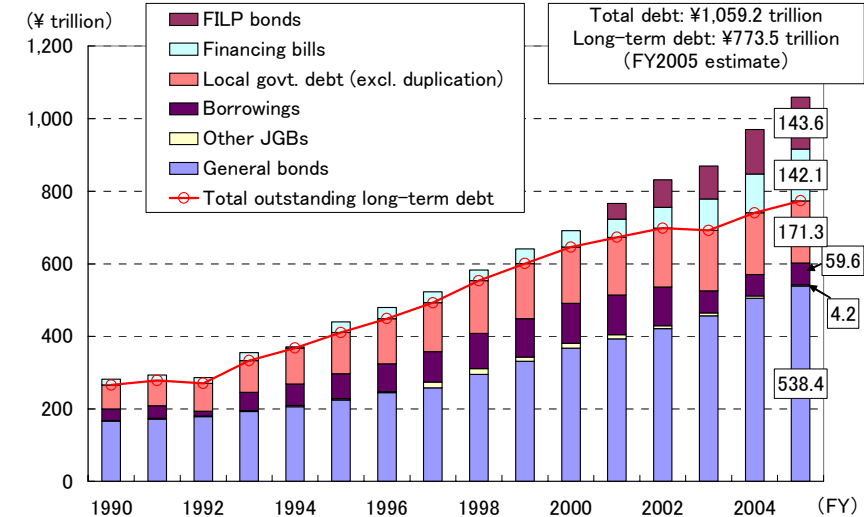
2. Total Outstanding Debt to Exceed ¥1,000 Trillion

With bond issuance on the rise, outstanding general bonds are estimated to reach ¥538.4 trillion

at the end of fiscal 2005. This represents over a three-fold increase in the past 15 years, from ¥166.3 trillion in 1990. In addition to general bonds, the national debt includes other JGBs (such as “subsidy bonds” issued to bereaved families of the war dead, and “subscription/contribution bonds” issued to pay subscriptions and contributions to organizations such as the IMF and World Bank), and borrowings of special accounts (such as the local allocation and local transfer tax special account). Together with the sizable local government debt, the long-term debt outstanding of the central and local governments amounts to ¥773.5 trillion, or 151.2% of nominal GDP.

In addition, when financing bills and FILP bonds are included, the total outstanding government debt is expected to reach ¥1,059.2 trillion at the end of fiscal 2005 (Figure 5). Dividing this amount by the estimated population of 127.619 million (as of October 1, 2004), the outstanding national debt per capita comes to approximately ¥8.3 million.

Figure 5 Outstanding Debt of Central and Local Government



Source: MOF

3. Public Debt Continues to Expand

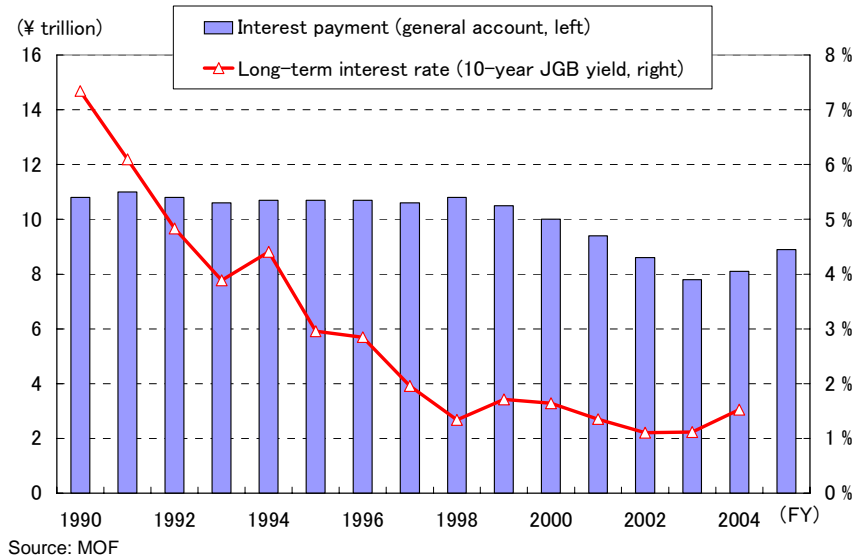
The central and local government debt, which stood at ¥282 trillion in 1990, began to surge in 1993 after the asset bubble burst. As a ratio to nominal GDP, long-term debt will have grown from 59.1% in 1990 to 151% at the end of fiscal 2005 (based on the government’s fiscal 2005 nominal GDP estimate); the total debt ratio will likewise have grown from 62.7% to 207%. If the public debt keeps growing faster than the economy, the looming fiscal crisis ahead will be no small threat.

4. Concern of Rising Interest Payments

The deflation that has long plagued the economy finally shows signs of easing. In the “Outlook for Economic Activity and Prices” (April 2005), the BOJ expressed the view that deflation could end

during fiscal 2006. However, the end of deflation could also cause nominal interest rates to rise. If that happens, the cost of servicing the enormous public debt will significantly increase fiscal expenditures.

Figure 6 Interest Payment and the Long-term Interest Rate



Interestingly, despite the growth of outstanding general bonds since the 1990s, the interest expense in the general account has actually decreased to ¥8.9 trillion in the fiscal 2005 budget, down from ¥10.8 trillion in 1990. This is because the long-term interest rate has plunged from 7.3% in 1990 (average yield on 10-year JGB for the fiscal year) to 1.5% in fiscal 2004 (Figure 6).

The decline in the long-term interest rate is largely attributed to the BOJ's quantitative easing policy, which combats deflation by driving down the short-term interest rate to zero. If the economy pulls out of deflation, interest rates are likely to rise, causing the national debt service (interest payment and debt redemption expenditure) to increase. The MOF estimates that a 1% interest rate increase will increase the national debt service by ¥1.5 trillion in fiscal 2006, ¥2.9 trillion in fiscal 2007, and ¥4.4 trillion in fiscal 2008.

5. Fiscal Restructuring Encompasses More Than the Primary Balance

1. Relationship of Nominal GDP Growth to Outstanding Debt—A Simulation

Due to the persistent and large fiscal deficits, the public debt has continued to grow as a ratio to nominal GDP. Moreover, rising interest payments are likely to accelerate expenditure growth. To halt the growth of public debt relative to nominal GDP and succeed with fiscal restructuring, the first condition is to achieve a primary surplus.

The relationship of the primary balance to public debt is generally defined by the following

equation. It shows that if primary balance PB is zero in period t , the debt ratio in period t is determined by current nominal interest rate r and GDP growth rate g . Thus if $r = g$, the debt ratio remains unchanged from the previous period.

$$\frac{D_t}{GDP_t} = \frac{PB_t}{GDP_t} + \frac{D_{t-1}(1+r)}{GDP_{t-1}(1+g)}$$

Alternatively, we could say that even if the primary balance is zero, the debt ratio will continue to grow as long as $r > g$.

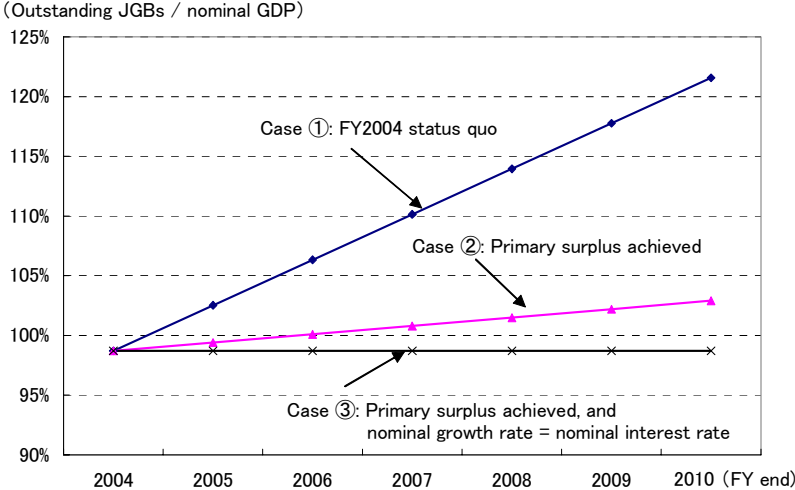
Below we simulate three scenarios to see how the debt ratio (outstanding general bonds to nominal GDP), which stood at 98.7% at the end of fiscal 2004, will grow to the end of fiscal 2010.

Case 1 assumes that conditions observed in fiscal 2004 remain fixed until fiscal 2010—that is, nominal interest rate $r = 1.5\%$ (the average yield on 10-year JGBs in fiscal 2004), nominal GDP growth rate $g = 0.8\%$, and the general account primary balance $PB = ¥15.9$ trillion.

Case 2 differs from Case 1 only in that the primary balance becomes zero ($PB = 0$) from fiscal 2005 onward. Meanwhile, the interest rate exceeds the GDP growth rate ($r > g$).

Finally, Case 3 assumes that the primary balance is zero from fiscal 2005, and both r and g are 1.5% ($r = g$). Thus the debt ratio does not grow.

Figure 7 How Nominal GDP Growth Will Affect Fiscal Restructuring



The simulation results are shown in Figure 7. In Case 1, the ratio of general bonds to nominal GDP rises to 121.6% in fiscal 2010.

In Case 2, the debt ratio increases, but the increase is muted by the primary balance. However, since interest rate r exceeds GDP growth rate g , the debt ratio continues to rise, reaching 102.9% in fiscal 2010.

Clearly, to restrain the growth of public debt as a percentage of nominal GDP, we need to achieve both conditions in Case 3—achieving a primary balance, and increasing the GDP growth rate such that $r = g$.

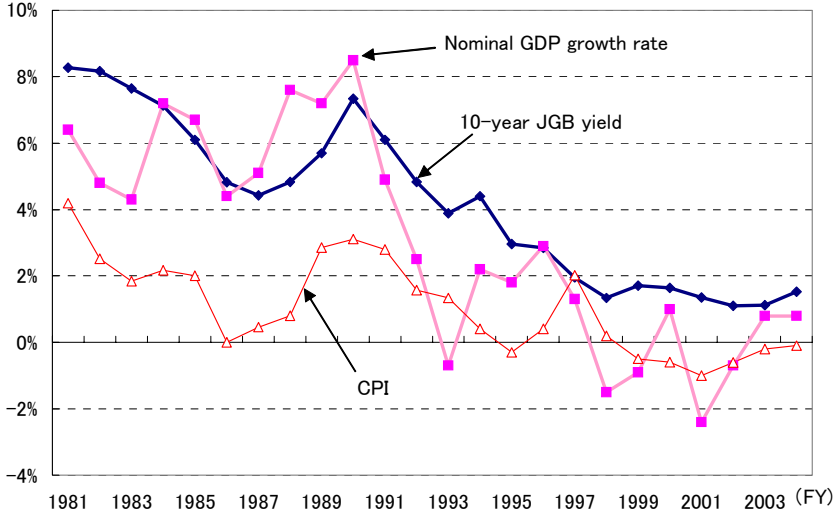
Under current conditions, where r (1.5%) exceeds g (0.8%) by 0.7-percentage point, we calculate that a primary balance in the general account will not check the debt ratio's growth. In fact, to do so would require a primary surplus of approximately ¥3.7 trillion in fiscal 2006. This is no trivial amount, considering that a 1-percentage point consumption tax hike is estimated to increase tax revenues by only ¥2.5 trillion.

Everyone agrees that eliminating the persistent primary deficit represents the first essential step toward fiscal restructuring. However, to rein in the growing debt ratio, the economy's growth rate also needs to catch up to the long-term interest rate.

2. Overcoming Deflation

Over the past decade, nominal GDP growth has averaged only 0.3% per year, and has frequently turned negative. As a result, it has consistently remained below the long-term interest rate (Figure 8).

Figure 8 Nominal GDP Growth Rate and the Long-term Interest Rate



Sources: Cabinet Office, MIC, Japan Bond Trading Co.

The low nominal GDP growth rate is attributed to slower real GDP growth averaging 1.5% in the past decade (68 SNA basis), down from 3.4% in the preceding decade, and to the negative GDP deflator in the past decade averaging -1.2% per year (68 SNA). Looking ahead, since the population decrease will limit real GDP growth, nominal GDP growth will rely heavily on turning deflation into inflation.

In addition, as Figure 8 suggests, persistent deflation also implies that the real interest rate has

remained high. If deflation ends, the nominal interest rate is expected to rise while the real interest rate falls, real interest payments are expected to decrease. Thus the end of deflation will play an important role in fiscal restructuring.

3. Deflation and Fiscal Restructuring—A Simulation

Overcoming deflation not only promises to reap economic benefits—higher nominal GDP growth and lower real interest rate—but to facilitate fiscal restructuring, for the reasons below.

First, higher nominal GDP growth will generate more tax revenue. As we noted earlier, tax revenue has suffered from the economy's dismal performance since the 1990s. Tax revenues, which are usually income elastic, should outpace nominal GDP growth. This will help reduce the primary deficit.

Second, as the price level rises, public expenditures will grow proportionally. However, pension benefits—a major component of expenditure growth—have already been capped by an adjustment method tied to labor force fluctuations (“macroeconomic slide”) in case of inflation. Thus the primary balance should improve on the expenditure side as well.

Moreover, although higher nominal interest rates could impede fiscal restructuring, we will at the same time experience a lower real interest rate and higher growth in nominal GDP and tax revenues. Thus even if the nominal interest rate rises, these other factors should help restrain the debt ratio's growth.

To test this hypothesis, we expanded the previous debt ratio equation so that revenue and expenditure growth are reflected in the primary balance. Then we simulated the debt ratio (outstanding general bonds to nominal GDP) to the end of fiscal 2010 for three inflation scenarios.

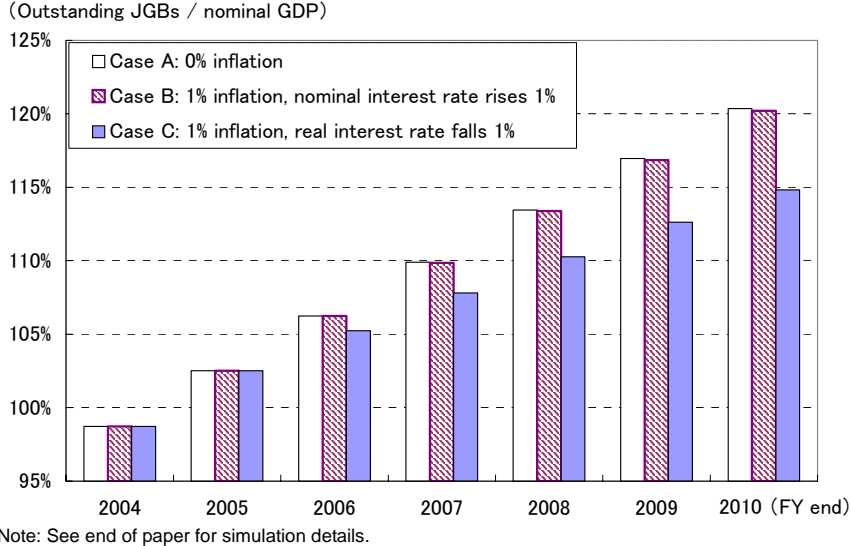
In Case A, inflation does not occur during the period to fiscal 2010. From fiscal 2005 onward, the nominal interest rate and nominal GDP growth rate remain at the fiscal 2004 levels of 1.5% and 0.8%, respectively. We assume that tax and other revenues are ¥47.7 trillion (from the initial fiscal 2005 budget), and grow slightly faster than nominal GDP (income elasticity of revenues is 1.1), so that the fiscal 2005 primary deficit of ¥15.9 trillion gradually shrinks each year.

In Case B, inflation emerges at a 1% rate from fiscal 2006. As a result, from fiscal 2006 the nominal interest rate rises from 1.5% to 2.5%, and nominal GDP growth rate from 0.8% to 1.8%. Thus the real interest rate does not change.

Similar to Case A, tax revenues grow and gradually reduce the primary deficit. However, expenditures of ¥63.6 trillion (the fiscal 2005 initial budget level, excluding national debt service) grow at the rate of inflation, thus expanding the primary deficit.

Finally, Case C is similar to Case B, except that the nominal interest rate remains at 1.5%. This implies that the real interest rate decreases by 1%.

Figure 9 How Inflation Will Affect Fiscal Restructuring



The simulation results are shown in Figure 9. If no inflation occurs (Case A), the ratio of general bonds outstanding to nominal GDP rises from 98.7% in fiscal 2004 to 120.4% in fiscal 2010.

Results for Case B are almost identical as Case A. With 1% inflation, the debt ratio reaches 120.2% in fiscal 2010. As we noted, the real interest rate remains unchanged, so that the nominal interest rate rises by the amount of the inflation rate.

In Case C, where the real interest rate decreases by the amount of the inflation rate, the debt ratio grows more slowly and reaches 114.3% in fiscal 2010. This is a significantly better than the zero inflation case and unchanged real interest rate case.

The results suggest that if deflation is overcome, the potential disadvantage of a higher nominal interest rate is offset by a lower real interest rate, higher tax revenues, and higher nominal GDP growth rate. The debt ratio is thus easier to rein in if inflation occurs and the real interest rate drops (Case C). Of course, we cannot draw broad conclusions from this simple simulation. However, overcoming deflation does seem to help suppress the growth of the debt ratio.

6. Ending Deflation and Achieving a Primary Surplus

The government’s goal of achieving a primary surplus by the early 2010s will be no easy task, especially with tax revenues faltering. Large tax hikes such as in the consumption tax are inevitable.

However, raising taxes simply to achieve a primary surplus—even temporarily—incur the risk of prolonging deflation or triggering a long recession. The weak nominal GDP growth rate would expand the gap with the nominal interest rate, making it even more difficult to rein in the debt ratio. A vicious cycle would then ensue—to curb the debt ratio, even larger tax hikes would become necessary to correct primary balance.

No one doubts that achieving a primary surplus is the first step toward fiscal restructuring. But to curb the growing debt ratio, it is equally important to overcome deflation and accelerate the nominal GDP growth rate. Thus a fiscal restructuring policy—whether to streamline expenditure categories, contain social security expenditures, or raise taxes—needs to be implemented at a moderate pace and scale, taking care not to upset the economy or aggravate deflation.

Reference— Simulation Details for Figure 9

Case A—Zero inflation

Inflation rate: 0%
Nominal interest rate: 1.5%
Nominal GDP growth rate: 0.8%

(¥ trillion)

	FY	2004	2005	2006	2007	...	2010
Tax revenues			47.7	48.1	48.5		49.8
Expenditures (excl. debt service)			63.8	63.8	63.8		63.8
Primary deficit			15.9	15.5	15.1		13.8
Outstanding JGBs	499.0	522.4	545.7	568.9			638.2
(ratio to nominal GDP)	98.7%	102.5%	106.2%	109.9%			120.4%
Nominal GDP	505.5	509.5	513.6	517.7			530.3

Case B—1% inflation from FY2006, nominal interest rate rises 1%

Inflation rate: 1.0% from FY 2006 (0% prior to FY2006)
Nominal interest rate: 1.5% (2.5% from FY2006)
Nominal GDP growth rate: 0.8% (1.8% from FY2006)

(¥ trillion)

	FY	2004	2005	2006	2007	...	2010
Tax revenues			47.7	48.6	49.6		52.6
Expenditures (excl. debt service)			63.8	64.4	65.1		67.1
Primary deficit			15.9	15.6	15.3		14.2
Outstanding JGBs	499.0	522.4	551.0	580.1			669.6
(ratio to nominal GDP)	98.7%	102.5%	106.2%	109.9%			120.2%
Nominal GDP	505.5	509.5	518.7	528.1			557.1

Case C—1% inflation from FY2006, real interest rate falls 1%

Inflation rate: 1.0% from FY2006 (0% prior to FY2006)
Nominal interest rate: 1.5%
Nominal GDP growth rate: 0.8% (1.8% from FY2006)

(¥ trillion)

	FY	2004	2005	2006	2007	...	2010
Tax revenues			47.7	48.6	49.6		52.6
Expenditures (excl. debt service)			63.8	64.4	65.1		67.1
Primary deficit			15.9	15.6	15.3		14.2
Outstanding JGBs	499.0	522.4	545.8	569.3			639.7
(ratio to nominal GDP)	98.7%	102.5%	105.2%	107.8%			114.8%
Nominal GDP	505.5	509.5	518.7	528.1			557.1

Notes: Income elasticity of tax revenues is 1.1; expenditures grow at rate of inflation.