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Japan's Medium- and Long-Term Fiscal Challenges

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Abstract

This paper assesses the sustainability of Japan's fiscal position. The simulations indicate that, even if the government's pension reform plan is fully implemented, the initial budget imbalance, combined with pressures from population aging, would lead to explosive increases in government deficits and debt. Present-value calculations point to a fiscal "gap" of about 4 percent of GDP, indicating the combination of tax increases and/or spending cuts that would be required to generate a sustainable long-run fiscal position. Finally, the paper presents an illustrative package of tax and spending measures that could be implemented to close this gap.

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	<u>Contents</u>	<u>Page</u>
Summary		iii
I.	Introduction	1
II.	New Baseline Projection for the Long-Term Fiscal Balance	2
	1. Medium-term projection	2
	2. Population aging	2
	3. Pension reform plan and projections for social security finance	5
	4. Projections for the non-social security sector	10
III.	Necessary Adjustments	11
IV.	Options and Strategies for Consolidation	15
	1. Consolidation strategy in the 1980s	15
	2. Expenditure measures	18
	3. Revenue measures	20
	4. Representative package	21
Text Tables		
	1. Japan: Old-Age Dependency Ratios in the G-7 Countries, 1960-2020	6
	2. Japan: Pension Reform Plan and Pension Finances, FY 1995-2020	8
	3. Japan: Breakdown of Changes in Fiscal Position, 1995-2020	13
	4. Japan: Consolidation in the 1980s	19
Appendix	Official Medium-Term Scenarios for Fiscal Consolidation	22
Appendix Table		
	1. Japan: Official Projections of Fiscal Position (General Account of the Central Government), 1996-2006	24
Charts		
	1. Japan: Summary of Fiscal Indicators, FY 1975-2001	3
	2. Japan: Long-Term Projections, 1990-2050	4
	3. Japan: Pension Reform Plan and Long-Term Social Security Balance, 1995-2050	9
	4. Japan: Long-Term Projection of General Government Balance, 1995-2050	12
	5. Japan: Baseline Projections, 1995-2050	14
	6. Japan: Consolidation Case, 1995-2050	16
	7. Japan: Ratio of Net Debt to GDP, 1995-2050	17
References		26

Summary

The deterioration in Japan's fiscal balance during the early 1990s, combined with future pressures from population aging, has led to concern about longer-term fiscal prospects. This paper assesses the sustainability of Japan's fiscal position using projections of government finances through the middle of the next century.

Abstracting from the exceptional fiscal stimulus measures taken in recent years and cyclical factors, Japan has a "core" budget deficit (excluding social security) of 3 percent of GDP. Furthermore, future spending pressures will be generated by higher central government transfers to the public pension plan, rising medical costs, increases in public investment to meet medium-term plans, and a growing debt-servicing burden. As a result, in the absence of new consolidation measures, the general government deficit would rise to about 10 percent of GDP by 2020 and 20 percent by 2050, while the debt-to-GDP ratio would grow exponentially.

To assess the size of the measures needed to prevent an explosive rise in deficits and debt, the paper then calculates the present value of the fiscal "gap" between expenditures and revenues. Specifically, the present value of the future path of primary government expenditures plus the value of the initial debt stock is compared with the present value of revenues. Expressed as a ratio to GDP, the resulting fiscal gap amounts to about 4 percent of GDP in 1996--that is, a combination of tax increases and spending cuts amounting to 4 percent of GDP would have to be implemented to generate a sustainable long-run fiscal balance. The longer such adjustments are postponed, the larger they would ultimately have to be. Finally, the paper presents an illustrative package of tax increases and spending cuts that could close this gap.

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I. Introduction

Reflecting weak activity and countercyclical measures, Japan's fiscal position has severely deteriorated during 1992-96, entirely reversing the consolidation effort in the 1980s. As Japan's fiscal situation faces major challenges associated with rapid population aging, which underscores the need to secure sound fiscal management, consolidation is a high priority on the policy agenda.

This paper discusses the initiatives that will be necessary to cope with Japan's medium- and long-term fiscal challenges. Integrating earlier work by the staff on the various impacts of population aging, and updating an analysis of the long-term fiscal situation, it describes medium- and long-term projections of the fiscal position, and assesses the size of the consolidation measures needed to restore long-run fiscal sustainability. The paper then explores possible options for consolidation and offers a representative package of such measures.

Section II describes the projected baseline path for the long-term fiscal balance, incorporating the long-run pension reform plan formulated in 1994. The pension reform plan is a powerful initiative to balance the public pension finances in the long run. The reform plan, however, envisages increasing central government contributions to the pension scheme. In addition, projected increases in medical care costs would also require an increasing burden on central and local governments in the form of transfers to social security. Without additional measures, government debt is projected to rise unsustainably.

Section III examines the magnitude of the adjustments necessary for long-run fiscal sustainability. To prevent an explosive rise in debt over the long run, the present value of primary expenditures plus the level of the initial debt stock should not exceed the present value of overall revenues. Performing this exercise using the baseline path gives an imbalance of 4 percent of GDP as of 1996. Postponing the adjustment would make the ultimate size larger, as the debt stock (and debt-service payments) would accumulate over the intervening years.

Section IV explores options for consolidation. Given the much greater challenges in the period ahead than in the 1980s, significant measures beyond past consolidation strategy will be required. In addition to steady implementation of the long-run pension reform plan, tight restrictions of current expenditures, including medical care reforms, would be called for. The size of the 10-year public investment plan should also be reconsidered. Moreover, further revenue measures will likely be necessary, such as raising the consumption tax rate beyond 5 percent and increasing taxation on social security benefits. A representative package of measures that would restore long-run sustainability includes: a compression of current spending by 1 percent of GDP; a revision to the public investment plan from ¥630 to ¥580 trillion yen; an increase in the consumption tax rate to 7 percent; and

an introduction of separate taxation on pension benefits at a 10 percent rate.

The appendix to this paper analyzes the authorities' alternative medium-term fiscal projections, which were recently published to stimulate discussion on new consolidation targets and strategy. Compared with the staff estimates of 4 percent of GDP adjustments, the official projections implicitly call for even larger adjustments amounting to about 6 percent of GDP. This reflects the ambitiousness of the implied target of the authorities--eliminating new issues of deficit-financing bonds, which implies a declining debt-to-GDP ratio, while the staff regards a constant debt-to-GDP ratio as being consistent with long-run fiscal sustainability.

II. New Baseline Projection for the Long-Term Fiscal Balance

1. Medium-term projection

Chart 1 illustrates recent developments in the fiscal position and projections over the medium term. Throughout the 1980s, the pursuit of fiscal consolidation caused the general government balance to swing from a deficit of 4 1/2 percent of GDP in FY 1979 to a surplus of 3 percent of GDP in FY 1990. During the course of the recent downturn, however, countercyclical demand management, as well as cyclical weakness in revenues, has resulted in a marked deterioration in the general government balance. The balance has worsened by 7 percent of GDP during FY 1991-96, and thus, almost all of the consolidation effort in the 1980s has been reversed.

In 1997, as the temporary countercyclical spending measures are projected to unwind and the scheduled tax increases take place, the fiscal position is projected to improve. ^{1/} After 1997, however, despite the elimination of the cyclical weakness in revenues, the deficit is projected to widen gradually. Public investment spending rises in line with the 10-year public investment plan, while population aging raises government contributions to social security through both channels of pension and medical care spending, as discussed below.

2. Population aging

Demographic projections indicate that, of the major industrial countries, Japan will experience the most rapid increase in the share of the elderly in the total population in the coming decades. The upper panel of Chart 2 illustrates the magnitude of the rise in the old-age dependency

^{1/} Two tax measures are planned as part of the staggered tax reform package adopted in 1994: the rise in the consumption tax rate from 3 to 5 percent in April 1997; and the reversal of the ¥2 trillion temporary cut in the personal income tax.

CHART 1

JAPAN
SUMMARY OF FISCAL INDICATORS, FY 1975-2001 1/
(In percent of GDP)

Sources: Ministry of Finance; Economic Planning Agency; and staff estimates and projections.

1/ The fiscal year is from April to March.

2/ Based on implementation of the 1994 pension reform and tax reform plans, and the ¥630 trillion public investment plan for 1995-2004.

CHART 2

JAPAN

LONG-TERM PROJECTIONS, 1990-2050

Sources: Data provided by the Japanese authorities; and staff estimates and projections.

1/ Ratio of those aged 65 and over to those aged 15-64.

2/ Ratio of those aged 14 and under to those aged 15-64.

ratio implied by official population projections. 1/2/ The ratio is projected to more than double from 20 percent to almost 45 percent during 1995-2020. Growth in the working age population turns negative beyond 1995 and will not recover to positive rates throughout the projection period (middle panel of Chart 2). As shown in Table 1, by 2020, Japan would jump from having the youngest population structure to having the oldest among major industrial countries, implying a very rapid transition in the age structure of population. 3/

The bottom panel of Chart 2 illustrates the implications for Japan's potential output growth of population aging. The assumptions include: total factor productivity growth continues at the rate expected for the 1990s; the capital-to-output ratio increases in line with the declining relative price of capital goods; and the participation rate of the working-age population is roughly constant beyond the year 2000. Under those assumptions, potential growth drops gradually from 2 1/4 percent over the remainder of the 1990s to about 1 percent in 2015, before recovering to about 1 1/2 percent in 2025. It then gradually falls again to about 1 percent in 2040.

3. Pension reform plan and projections for social security finance

The largest impact of population aging on the fiscal position will come from a rise in pension benefits. The pension reform plan approved by the Diet in November 1994 is thus an important initiative in addressing the long-term fiscal challenges. The reform plan includes: increases in contribution rates in stages; a phased increase in the pension eligibility age from 60 to 65; and a change in the indexation method of benefits from gross to net income--i.e., after payments of taxes and social security contributions. 4/

1/ The "middle series" official forecast prepared by the Ministry of Health and Welfare in 1992. This projection assumes a recovery in the fertility rate over the longer run to 1.8 births per woman from the current level of 1.5. It is widely acknowledged that the assumed fertility rate might be too high, implying an even sharper rise in the old-age dependency ratio.

2/ This middle series projection is also the basis of the official projections of pension finances and the design of the long-run pension reform plan.

3/ Comparative demographic and fiscal projections for the G-7 countries are discussed in "Aging Populations and the Fiscal Consequences of Public Pension Schemes With Particular Reference to the Major Industrial Countries," a forthcoming IMF Occasional Paper.

4/ While the initial increase in the contribution rate, as well as other reform measures, has been enacted, the longer-term incrementing schedule of the contribution rate--a 2.5 percentage points increase every five years until 2020--is subject to future approval of the Diet. The analysis below assumes full implementation of the pension reform plan.

Table 1. Japan: Old-age Dependency Ratios in the G-7 Countries,
1960-2020

(In percent)

	1960	1980	1990	2000	2020
Japan	5.7	9.1	12.1	17.0	25.5
Italy	9.3	13.1	14.1	17.0	20.9
France	11.6	14.0	14.0	15.6	19.5
Germany	11.5	15.6	14.6	15.5	19.1
United Kingdom	11.7	15.1	15.7	15.4	18.2
Canada	7.5	9.5	11.5	12.4	16.7
United States	9.2	11.3	12.6	12.4	16.4

Source: "The Japanese Budget in Brief, 1995," Ministry of Finance.

The authorities have published projections for revenues, expenditures and reserves for the Employees' Pension Insurance Scheme (EPIS) and the National Pension Scheme (NPS) as well as schedules for central government contributions, assuming the full implementation of the long-run pension reform plan. As the EPIS and NPS account for the vast bulk--over 85 percent of participants--of public pension operations, these projections provide a solid basis for constructing the baseline projections for pension finances. 1/2/

As shown in Table 2, the reform has a remarkable impact on pension finances: an 8 percent of GDP improvement in the balance in FY 2020 over the non-reform scenario. The upper panel of Chart 3 illustrates baseline projections for long-run public pension finances, as envisaged in the pension reform plan. Pension premium contributions will be raised in stages from 7 percent of GDP in 1995 to 12 percent by 2020. Pension benefits, compressed by the reform, will stabilize at about 16 percent of GDP after 2020, following a rapid rise from 7 1/2 percent of GDP in 1995. Government contributions to the pension schemes are projected to rise to 2 percent of GDP by 2020 from 1 1/4 percent in 1995. With the gap between benefits and premiums (the primary pension balance) being financed by interest income and government transfers, overall pension finances would be approximately balanced in the long run.

Another main source of spending pressures is a projected rise in medical and health insurance payments. Currently, about 70 percent of total medical care costs are financed through insurance premia and patients' co-payments, with the remainder--i.e., the primary deficit of the medical care scheme--being financed through transfers from the central and local governments. The staff estimates that the primary deficit would rise by 1 1/2 percentage points of GDP during 1995-2025 and by a further half a percentage point during 2025-2050. A similar rise in medical care payments

1/ Other public pension systems include Mutual Aid Associations that primarily cover public sector employees. In addition, some categories of private pension plans are classified as part of the social security sector of the general government on a national accounts basis.

2/ Staff baseline projections for pension finances assume that other components of public pensions follow the same path as the integrated path for the EPIS and the NPS in the official projections. Instead of the fixed output growth rate--implied by the fixed growth in standardized household income--assumed in the official projections, the staff projection for potential output is used.

Table 2. Japan: Pension Reform Plan and Pension Finances, FY 1995-2020

(In percent of GDP)

	<u>FY 1995</u>	<u>FY 2020</u>	
		Without reform	With reform
Benefits	-7.4	-16.7	-15.7
Premia	+7.0	+7.0	+12.0
Government contributions	+1.2	+2.0	+1.9
Interest income	+2.0	- -	+ 2.0
Balance	+2.8	-7.7	+0.2

Source: Data provided by the Ministry of Health and Welfare; and staff estimates.

CHART 3

JAPAN

PENSION REFORM PLAN AND LONG-TERM SOCIAL SECURITY BALANCE, 1995-2050
(In percent of GDP)

Sources: Data provided by the Japanese authorities; and staff estimates and projections.

1/ Including central and local governments transfers to pension and medical care schemes.

and government transfers is also projected by the official simulations included in the "21st Century Welfare Vision." 1/2/

Integrating pension and medical care finances, the lower panel of Chart 3 illustrates long-term projections for the overall social security balance. Since the primary deficit of medical care is financed through government transfers, the overall social security balance, driven by pension finances, would be in broad balance in the long run. Combined government transfers would rise from 3 percent of GDP in 1995 to 5 1/4 percent in 2020 and further to 5 3/4 percent of GDP in 2040.

4. Projections for the non-social security sector

As discussed above, full implementation of the pension reform plan would bring social security finances to balance in the long run. Therefore, the fiscal challenge now can be redefined as achieving sustainability at the level of the non-social security sector of the government--i.e., the central and local governments. 3/ It is important to note that the social security projections envisage a substantial rise in government transfers to social security, both for pensions and medical care. These rising transfer requirements constitute a significant spending pressure on the non-social security sector. The pension reform plan, thus, would not fully offset spending pressures from population aging.

To construct baseline projections for the non-social security sector of the general government, implementation of currently announced policies over the medium term and unchanged program parameters are assumed. The assumptions include: revenues grow faster than nominal GDP with an unchanged revenue buoyancy of 1.1 until 2020, and subsequently grow in line with nominal GDP; primary current spending grows in line with nominal GDP;

1/ The Vision was published by the Ministry of Health and Welfare in March 1994. It projected that overall medical care payments would increase by about 5 percent of GDP from the 5 percent level in 1993 to some 10 percent of GDP in 2025. Although projections for the financing of these payments are not shown, if 70 percent of total payments continues to be financed by premia and co-payments, the worsening in the primary balance that would be financed through government transfers would be 1 1/2 percent of GDP.

2/ Social expenditures that will be affected by population aging also include other categories of social transfers--social assistance grants and unfunded welfare benefits, as well as certain expenditures of central and local governments, such as expenditures for hospital construction and facilities. As those expenditures are directly or indirectly financed by central and local governments, they are excluded from the analysis of the social security balance in this study.

3/ The analysis below, thus, focuses on the general government excluding social security.

capital expenditures rise to achieve the 10-year public investment plan until 2004, and subsequently grow in line with nominal GDP. ^{1/}

As shown in Chart 4, the baseline projection for the non-social security sector balance, which almost overlaps the overall general government balance from 2010 on, illustrates a continuous decline. Table 3 summarizes a breakdown of this decline during FY 1995-2020. The primary balance declines by 1 3/4 percent of GDP, with rises in transfers to the social security scheme (2 percent of GDP) and in public investment (1 1/4 percent of GDP) partly offset by an increase in taxes (1 1/2 percent of GDP). Debt accumulation accelerates sharply beyond 2000, resulting in an increase in debt-service payments of 5 percent of GDP during FY 1995-2020. Over the very long run, the ratio of government debt to GDP rises to 370 percent of GDP by 2050, and debt-service payments exceed 16 percent of GDP in 2050 (Chart 5). These developments are clearly unsustainable.

III. Necessary Adjustments

To prevent the debt explosion implied by the baseline projection, significant adjustments will need to be adopted. The condition that the present value of the debt not be unbounded, which is sometimes known as a no-Ponzi-game (NPG) condition, requires that debt should not increase asymptotically faster than the interest rate. This condition, in turn, implies that the present value of future primary surpluses should be large enough to offset the initial debt stock.

The magnitude of the actions required to achieve long-run fiscal sustainability can be obtained by comparing the present value of the primary balance of the baseline path with the NPG condition. Specifically, the present value of primary expenditures plus the level of the initial debt stock is subtracted from the present value of overall revenues. The resulting gap represents the imbalance in the fiscal position, and thus, the magnitude of the actions that need to be taken to stabilize the debt-to-GDP ratio over the long run. In practice, the estimated gap is divided by the present value of GDP, so that the magnitude of the necessary actions is indicated as a ratio to GDP.

^{1/} The tax revenue buoyancy of 1.1 is based on the long-term historical observations adjusted for discretionary changes, and is employed by the authorities for medium-term policy planning. The assumption of a decline in the buoyancy beyond 2020 reflects, in a simplified form, a projected decline in buoyancy over time, together with a shift from direct to indirect taxes in the Japanese tax structure.

CHART 4

JAPAN

LONG-TERM PROJECTION OF GENERAL GOVERNMENT BALANCE, 1995-2050
(In percent of GDP)

Sources: Data provided by the Japanese authorities; and staff estimates and projections.

Table 3. Japan: Breakdown of Changes in Fiscal Position, 1995-2020

(In percent of GDP)

	Fiscal position	Change
Structural deficit in 1995	4.4	
Less temporary factors and 1997 measures	-1.5	
"Core" deficit in 1995	2.9	
Change in primary revenues and expenditures		
Plus higher:		
Pension transfers		0.7
Medical care transfers		1.3
Public investment		1.3
Less effects of tax buoyancy		-1.5
Plus higher debt-service payments		5.0
Deficit in 2020	9.7	

Source: Staff estimates and projections.

CHART 5

JAPAN

BASELINE PROJECTIONS, 1995-2050
(In percent of GDP)

Sources: Data provided by the Japanese authorities; and staff estimates and projections.

Performing this exercise using the baseline scenario gives an imbalance of 4 percent of GDP as of 1996. It means that adjustments amounting to 4 percent of GDP--in the form of either a permanent increase in revenues, a cut in expenditures, or a combination of these--would be needed as of 1996 to ensure that the debt stock, as a ratio to GDP, does not rise without bound in the long run. Postponing the adjustments would make their ultimate size larger, as the debt stock (and the debt-service payments) would accumulate over the intervening years. For instance, if the required adjustments were postponed by five years, they would rise to 4 1/2 percent. While the rise in the needed adjustments is gradual initially, it accelerates exponentially.

Chart 6 illustrates a hypothetical situation in which all the required adjustments take place by reducing current expenditures in 1996 as a "consolidation" case. Given the projected parameters for primary revenues and expenditures, the overall deficit would stabilize at about 1 percent of GDP in outer years, while the ratio of debt to GDP would stabilize at about 30 percent (Chart 7). ^{1/}

IV. Options and Strategies for Consolidation

This section discusses options for consolidation to achieve the required adjustments of 4 percent of GDP. After reviewing strategies taken in the 1980s, it examines both expenditure and revenue measures, and offers a representative package of measures.

1. Consolidation strategy in the 1980s

The strategy employed in the consolidation process in the 1980s involved tight expenditure restrictions, coupled with "waiting" for revenue buoyancies in excess of unity to raise revenues without discretionary tax

^{1/} The "stabilized" level of the debt-to-GDP ratio is determined by primary balance as a share of GDP, the GDP growth rate, and the assumed interest rate.

The change in debt-to-GDP ratio is expressed as:

$$\Delta(DT/Y) = - OB/Y - g \cdot (DT_{-1}/Y_{-1})$$

where DT is government debt stock, Y is nominal GDP, OB is overall balance, and g is growth rate in nominal GDP. The relationship between the overall balance and the primary balance (PB) is expressed as:

$$OB = PB - r \cdot DT_{-1}$$

where r is nominal interest rate. In the steady state where the debt-to-GDP ratio stabilizes, the following equations thus hold:

$$OB/Y = - g \cdot DT/Y$$

$$PB/Y = (r-g) \cdot DT/Y$$

CONSOLIDATION CASE, 1995-2050
(In percent of GDP)

Sources: Data provided by the Japanese authorities; and staff estimates and projections.

CHART 7
JAPAN
RATIO OF NET DEBT TO GDP, 1995-2050
(In percent of GDP)

Sources: Data provided by the Japanese authorities; and staff estimates and projections.

increases. 1/ The outcome was quite successful, with an improvement in the general government balance of 8 percentage points of GDP during FY 1979-90 (Chart 1). After an initial rise by 2 percentage points of GDP, overall expenditures in relation to GDP were cut back during FY 1983-90 to the same level as at the beginning of the decade. At the same time, revenues rose by 8 percentage points of GDP, helped by unusually buoyant tax revenues in the "bubble" period (FY 1986-90). 2/

Without the unusual revenue impact of the bubble, it is estimated that the improvement in the overall balance during FY 1979-90 would have been 5 1/2 percentage points of GDP. 3/ As it took 11 years for this improvement, the average pace of consolidation per year was about 1/2 percent of GDP. (Table 4). Achievement of the same pace of consolidation in this time round would thus imply that about eight years would be needed to reach a sustainable position.

The challenges in the period ahead, however, are likely to be much greater than in the 1980s due to spending pressures from population aging and slower potential output growth. Since the effects of the tax buoyancy in excess of unity are already embodied in the estimate of the required adjustments, in the absence of discretionary tax increases, all the adjustments would have to be achieved through expenditure control. The size of expenditure cuts in the past consolidation phase was less than 2 percentage points of GDP, even in the absence of pressures associated with population aging. It clearly indicates that the past strategy would be insufficient for the next phase of consolidation.

2. Expenditure measures

Tight restrictions of current expenditures should be a main pillar of consolidation. While an across-the-board reduction in current expenditures enforced by severe budgetary request guidelines would continue to be useful, a more selective approach--perhaps involving sharp cuts in certain areas--

1/ The official slogan was "fiscal consolidation without tax increases." It should be noted, however, that bracket creep and the tax buoyancy in excess of unity were expected to augment tax revenues in relation to GDP, while major discretionary changes to tax systems were avoided until the introduction of the consumption tax in 1989.

2/ In the late 1980s, tax revenue growth was extraordinarily buoyant, owing in part to higher direct tax receipts due to the economic boom as well as to the effect of the sharp increase in asset prices on taxes related to property and securities transactions.

3/ To eliminate the effect of the bubble, the hypothetical level of revenues ("standardized" revenues) is estimated by using the conventional revenue buoyancy if output had been at potential. The standardized revenues rose by 5 1/2 percent of GDP during 1979-90, implying the remainder (2 1/2 percent of GDP) is due to the effect of the bubble.

Table 4. Japan: Consolidation in the 1980s

(In percent of GDP)

	FY 1979	FY 1990	Change (1979-1990)
Overall balance	-4.4	3.5	+7.9
Revenue	26.8	34.7	+7.9
Of which: standardized revenue	26.8	32.3	+5.5
Expenditure	31.2	31.2	--
Overall balance without the effect of the bubble	-4.4	1.1	+5.5

Source: Annual Report on National Accounts, Economic Planning Agency; and staff estimates.

would be required. 1/ Administrative reform initiatives should be upgraded and continued, with a focus placed on the possible effects of compressing expenditures.

Among other current expenditure items, an increase in the required government transfers to social security is a major source of spending pressures. While the scope for further reform of the pension scheme beyond the long-term plan is limited, government transfers to the medical care scheme alone are expected to rise by 1 1/2 percent of GDP during 1995-2020, calling for reforms to the medical care scheme. Although an increase in the overall medical payments would be unavoidable as population ages, the financing structure could be modified. For instance, if the financing share from insurance premia and patients' co-payments is raised from the current 70 percent to 80 percent, it would reduce the required government transfers by 1/2 percent of GDP in 1995. The saving effect of this measure would rise in relation to GDP as the share of medical payments to GDP rises over time; it would be 1 percent of GDP in 2020 when overall medical payments are expected to reach 10 percent of GDP.

Compression could also be sought in capital expenditures; in particular, the size of the 10-year public investment plan could be reconsidered. The present plan calls for ¥630 trillion of public investment during FY 1995-2004, and would raise Japan's public investment to over 8 percent of GDP from the current level of 7 percent of GDP. 2/ This level is much higher than the average level for other G-7 countries of about 3 percent. Even at the current level, there is widespread concern about possible inefficiencies in public investment, given the inflexibility in allocations of the public works budget. A revision to the plan that would keep capital expenditures constant in relation to GDP at the current level would generate a consolidation impact of 1 percent of GDP compared with the baseline. This revision implies a change in the total size of the plan from ¥630 to ¥580 trillion.

3. Revenue measures

Another option is to increase the consumption tax rate beyond 5 percent. Each percentage point increase in the consumption tax rate would

1/ Imposing stringent upper limits on budgetary requests has been a major device for tight expenditure control since the early 1980s. It enforces a uniform reduction in current expenditures across-the-board, and thus, has been effective in averting political pressures from individual groups with vested interests.

2/ Effects of temporary additions from countercyclical fiscal stimulus packages are excluded in this calculation. Also, public investment here refers to capital expenditures of the general government.

generate net tax revenue equivalent to about 1/2 percent of GDP. ^{1/} As the 5 percent rate is already incorporated in the baseline path, raising the rate further to 7 percent, as was included in the initial tax reform package announced under the Hosokawa Administration in early 1994, would thus generate additional revenues of 1 percent of GDP.

Strengthening taxes on pension benefits is another option. The current taxation of public pensions is very light. At the contribution level, they are not taxed statutorily. At the benefit level, while pension income is subject to withholding tax in principle, the generous deductions substantially raise the tax threshold, making the pension income of most households effectively tax-exempt. The revenue implications of this measure would be large. For instance, if a separate taxation rate of 20 percent were uniformly applied (the same as that applied to interest income), it would generate additional revenues of over 1 percent of GDP in 1996. The revenue effect would rise as pension benefits grow in relation to GDP over time. A taxation at an average rate of 10 percent would generate 1 percent of GDP revenues by FY 2001, when pension benefits reach 10 percent of GDP.

4. Representative package

A balanced combination of the possible measures mentioned above would be desirable to achieve the needed overall adjustment of 4 percent of GDP. A possible representative package might thus include: an increase in the consumption tax rate to 7 percent; tighter taxation of pension benefits at an average rate of 10 percent; a revision to the public investment plan to ¥580 trillion; and a compression of current expenditures, particularly medical care spending. Each of the first three measures would have an impact of 1 percent of GDP over the medium term as discussed above; current expenditures should be compressed by the remaining 1 percent of GDP. Adopting this package of measures by the end of the medium term, together with the steady implementation of the long-term pension reform plan, would put the Japanese fiscal position back on a long-run sustainable track.

Long-run projections attempted in this study are, of course, subject to many uncertainties and provisions regarding future developments. In addition, the representative package is only an example of a combination of possible measures and does not preclude other options for consolidation. Nonetheless, a sizable magnitude of required adjustments underscores the necessity of firm consolidation measures.

^{1/} Net revenue increase refers to gross revenue increase less the increase in the government's tax payments. This estimate incorporates effects of the reduction in special treatment for small enterprises in the consumption tax scheme.

Official Medium-Term Scenarios for Fiscal Consolidation

This appendix discusses the authorities' alternative medium-term fiscal projections that were formulated to facilitate public discussion on consolidation targets and strategy. Section 1 describes their approach and the assumptions for the two main scenarios: the reference scenario and the consolidation scenario. Section 2 analyzes the results for the two scenarios, and addresses the implications for medium-term consolidation initiatives. Section 3 compares the official results with staff estimates of the necessary consolidation measures.

1. Approach and assumptions

The authorities present a medium-term path for the fiscal position of the general account of the central government. For the reference scenario, revenues and expenditures are projected based on "current policy" assumptions. Specifically, revenues are projected based on the economic growth rate envisaged in the official economic plan--3 1/2 percent annual growth in nominal GDP. 1/ The overall buoyancy of tax revenues is assumed to remain at 1.1, the historical average level. While the effects of the comprehensive tax reform adopted in 1994--involving an increase in the consumption tax rate and a simultaneous end to the temporary income tax cut in 1997--as well as the tax measures for FY 1996 are incorporated, other tax parameters are assumed to remain unchanged. Expenditures are projected through item-by-item estimates under current policies; systems and measures are fixed as envisaged in the FY 1996 budget, and no discretionary changes beyond FY 1996 are incorporated. While detailed expenditure projections are not shown, general expenditures are projected to grow by 3 3/4 percent per year over the medium term. 2/ Financing from construction bonds is assumed to rise in line with growth in capital expenditures (which rise by 3 percent per year). All the remaining financing gap is assumed to be met through deficit-financing bonds.

For the consolidation scenario, revenues are assumed to follow the same path as in the reference scenario. Regarding expenditures, three alternatives are shown with different growth rates for general expenditures (5, 3 and 0 percent per year--Cases A, B and C, respectively). Financing

1/ The new medium-term economic plan ("Economic and Social Plan for Structural Reform, FY 1995-2000") was adopted by the Cabinet in December 1995. It envisages 3 1/2 percent annual growth in nominal GDP over the medium term on the condition that substantial structural reforms--in line with the action agenda included in the plan--are implemented. It also warns that nominal growth would be only 1 3/4 percent if structural reforms fall short.

2/ The growth rate of general expenditures in FY 1997 is projected to be relatively high (8 3/4 percent). This is accounted for by the unwinding of temporary expenditure reductions included in the FY 1996 budget and a projected increase in government payments of the consumption tax.

through deficit-financing bonds is targeted to be eliminated by FY 2003, with a linear reduction assumed over the intervening years. The amount of the remaining financing gap is then presented as the "needed adjustment" for each year. This amount represents the required adjustment either through expenditure cuts or revenue increases to meet the target of reducing (and, eventually, eliminating) deficit-financing bonds. 1/2/

2. Official results and implication for consolidation initiatives

Appendix Table 1 summarizes the results for the reference scenario as well as the three consolidation scenarios. The reference scenario indicates a rapidly increasing path of the government debt stock under current policy assumptions. The outstanding bond stock of the central government would rise by about 2 percentage points annually in relation to GDP, and reach about 70 percent of GDP by FY 2006. Given the similar size of debts expected at the level of local governments and the eroding social security surplus, this projected path of the government debt stock is clearly unsustainable.

The consolidation scenarios indicate that the elimination of deficit-financing bonds by FY 2003 would imply lowering the bond-financing ratio to 10 percent at the end of the period. Under this scenario, while the nominal debt stock of central government would continue to increase, its ratio to GDP would begin to decline from FY 2000. The official presentation suggests that the authorities regard achieving this target as one of the broad objectives of fiscal consolidation.

The results for the three consolidation scenarios suggest that achieving the authorities' target would require substantial adjustments. Assuming 5 percent growth in general expenditures--higher than the growth rate in nominal potential GDP, reflecting population aging, Case A shows a needed adjustment of ¥19 trillion in FY 2003. The size of the needed adjustment corresponds to about 3 percent of GDP, which requires, if generated through the consumption tax, raising the consumption tax rate by 6 percentage points. Case B shows that the needed adjustment in FY 2003 becomes ¥11 trillion (1 3/4 percent of GDP), if growth in general expenditures is limited to an annual rate of 3 percent. In this case, the remaining adjustment would require an increase in the consumption tax rate of 3 1/2 percentage points. Case C shows that, if all the needed adjustment

1/ Another set of official simulations indicates that attempts to eliminate recourse to deficit-financing bonds before FY 2003 are unfeasible. For instance, eliminating deficit-financing bonds by FY 2000 would require a nominal reduction in expenditures of 5 percent per year.

2/ The official document also presents estimates of the needed adjustments under the assumption that the annual growth rate of nominal GDP is lower at 1 3/4 percent--the scenario envisaged in the new economic plan without major structural reforms. Owing primarily to lower tax revenues, consolidation prospects become even more bleak under this assumption.

Table 1. Japan: Official Projections of Fiscal Position (General Account of the Central Government), 1996-2006

(In trillions of yen, unless otherwise indicated)

Fiscal year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<u>Reference scenario</u> (no reduction in deficit-financing bonds)											
Revenue	54.1	60.3	63.5	65.9	68.3	70.9	73.6	76.5	79.4	82.4	85.6
General expenditures (3.75% growth after FY 1998)	43.1	46.9	48.4	50.3	52.2	54.2	56.2	58.4	60.6	62.9	65.3
Debt service payments	13.5	14.9	16.3	17.2	19.2	19.3	20.7	21.2	23.2	23.5	24.7
Other expenditures ^{1/}	15.6	18.0	18.8	19.5	20.2	21.0	21.3	22.1	22.9	23.8	24.7
Financing											
Construction bond issuance	9.0	9.6	9.9	10.2	10.7	11.1	11.4	11.7	12.1	12.5	12.9
Deficit-financing bond issuance	12.0	13.3	13.8	15.2	16.3	16.8	17.4	18.7	19.9	21.6	23.1
Less: debt amortization	2.9	3.4	3.6	4.4	3.6	4.2	4.2	5.2	4.7	6.2	6.8
Net bond issuance	18.1	19.5	20.1	21.0	23.4	23.7	24.6	25.2	27.3	27.9	29.2
Bond-financing ratio (in percent) ^{2/}	28.0	27.5	27.2	27.8	28.3	28.2	28.1	28.5	28.7	29.2	29.6
Outstanding bond stock	240.5	260.0	280.1	301.1	324.5	348.2	372.8	398.0	425.3	453.2	482.4
In percent of GDP	48.5	50.6	52.7	54.8	57.0	59.1	61.1	63.1	65.1	67.0	68.9
<u>Consolidation scenarios</u> (eliminating deficit-financing bonds by FY 2003) ^{3/}											
Debt service payments	13.5	14.8	15.8	16.1	17.5	16.7	17.1	16.5	...	...	...
Financing									...	...	...
Construction bond issuance	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	...	...	...
Target deficit-financing bond issuance	12.0	8.1	6.7	5.4	4.0	2.7	1.3	--	...	...	...
Less: debt amortization	2.9	3.4	3.5	4.4	3.5	4.1	4.0	5.0	...	...	...
Net bond issuance	18.1	13.7	12.2	10.0	9.5	7.6	6.3	4.0	...	...	...
Bond-financing ratio (in percent) ^{2/}	28.0	22.1	19.9	17.9	16.1	14.2	12.3	10.6	...	...	...
Outstanding bond stock	240.5	254.2	266.4	276.4	285.9	293.5	299.8	303.8	...	...	...
In percent of GDP	48.5	49.5	50.1	50.3	50.2	49.8	49.2	48.1	...	...	...
<u>Case A</u>											
General expenditures (5% growth)	43.1	45.3	47.6	49.9	52.4	55.1	57.8	60.7	...	...	...
Needed adjustment	—	4.0	6.5	9.6	12.3	14.3	16.2	18.8	...	...	...
<u>Case B</u>											
General expenditures (3% growth)	43.1	44.4	45.8	47.1	48.6	50.0	51.5	53.1	...	...	...
Needed adjustment	—	3.1	4.7	6.8	8.5	9.2	9.9	11.1	...	...	...
<u>Case C</u>											
General expenditures (zero growth)	43.1	43.1	43.1	43.1	43.1	43.1	43.1	43.1	...	...	...
Needed adjustment	—	1.8	2.1	2.8	3.0	2.3	1.6	1.2	...	...	...

Source: Data provided by the authorities; and staff calculations.

^{1/} Includes transfers to local governments.^{2/} Defined as the ratio of bond financing to the total size of the general account budget.^{3/} Revenue and other expenditures are assumed to be the same as in the reference scenario.

is pursued by restricting expenditures, general expenditures are required to stay at the current level--no nominal growth--for seven consecutive years. 1/2/

3. Comparison with staff estimates

As discussed above, the official results indicate that, if relatively fast growth in expenditures, reflecting population aging, is assumed, the needed adjustment would amount to 3 percent of GDP in FY 2003 to achieve the target. While the official projections only refer to the central government, a similar magnitude of adjustments would be necessary for local governments. Thus, at the level of the general government excluding social security, the official consolidation scenario implies that new measures of 6 percent of GDP are necessary to achieve the consolidation target.

Assuming the full implementation of the long-run pension reform plan, the staff estimates that new measures amounting to about 4 percent of GDP would be needed to put the fiscal position on a sustainable long-run footing. The larger adjustments implied by the official projections reflect the ambitiousness of the authorities' implied target: they aim at eliminating new issues of deficit-financing bonds, which would involve a declining debt-to-GDP ratio, while the staff defines a constant debt-to-GDP ratio as being consistent with long-run fiscal sustainability.

1/ Given the projected increase in spending requirements from population aging, to keep general expenditures constant in nominal terms would involve significant consolidation measures, including major changes and reforms of existing systems and policies. General expenditures were indeed restricted to virtually zero nominal growth for five years during 1982-87. Two differences, however, should be noted: there were no pressures from population aging at that time; and the political situation was stable under the long monopoly of power by the Liberal Democratic Party, which allowed the implementation of strong policy initiatives.

2/ As capital expenditures should grow at a relatively high rate (around 6 percent) to meet the target envisaged in the 10-year public investment plan, necessary restrictions on current expenditures would be more severe than suggested by the overall expenditure ceilings.

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