

THE LONG-TERM SUSTAINABILITY OF PUBLIC FINANCE IN JAPAN

Yukihiro Oshika *

Introduction

Compared to other advanced countries, the public finance of Japan is in the worst position in terms of debt level. The level is in fact in the world historically worst position except during and soon after the war period. Moreover, expenditures regarding social security benefits are increasing rapidly due to the fastest ageing population in the world.

Japan has risks in maintaining its public finance because of expected growth of social security benefits or possibility of boosting of long-term interest rate in the future. In order to cope with these risks, it is necessary to estimate the future financial burdens properly and take actions toward lightening them.

Most of the advanced countries which are similarly suffering from ageing population have recently implemented long term fiscal projection to examine the future burdens. They have estimated expenditures regarding ageing based on the demographic changes, presented total picture of public finance including fiscal balance and debt level, and examined measures to maintain consolidated fiscal management.

This short note aims at introducing Japan's current fiscal position, efforts being taken toward fiscal consolidation, long-term fiscal projection and at addressing issues on fiscal sustainability in Japan mainly from a practical viewpoint.

Outline

The main points are as follows:

- Japan's fiscal balance has been improving steadily in recent years, however her gross debt still remains on an upward trend;
- Ageing is progressing faster and larger than in any other developed country, therefore, social security related expenditures are putting increasing pressure on the nation's pocketbook;
- Currently, the Japanese government is dealing with fiscal consolidation under the objective of ensuring a surplus in the primary balance of the central and local governments combined by FY 2011 and a decrease of the debt-to-GDP ratio at a steady pace in the mid-2010s;
- As a part of its fiscal consolidation effort, the Ministry of Finance published "The long-term Sustainability of Public Finance", the first official sustainability analysis using the method developed by the European Commission. The Cabinet Office also published a long-term fiscal analysis called "Social Security and Taxation – Multiple Options of Benefits and Burdens", both of which has resulted in clearly showing the serious situation of the Japanese public finance.

* At the time of writing, the author was Director for Fiscal Affairs, Budget Bureau, Ministry of Finance, Japan.

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The article is based on the Author's personal views and should not be regarded as reflecting official stance of the Japanese government.

1 Japan's current fiscal position

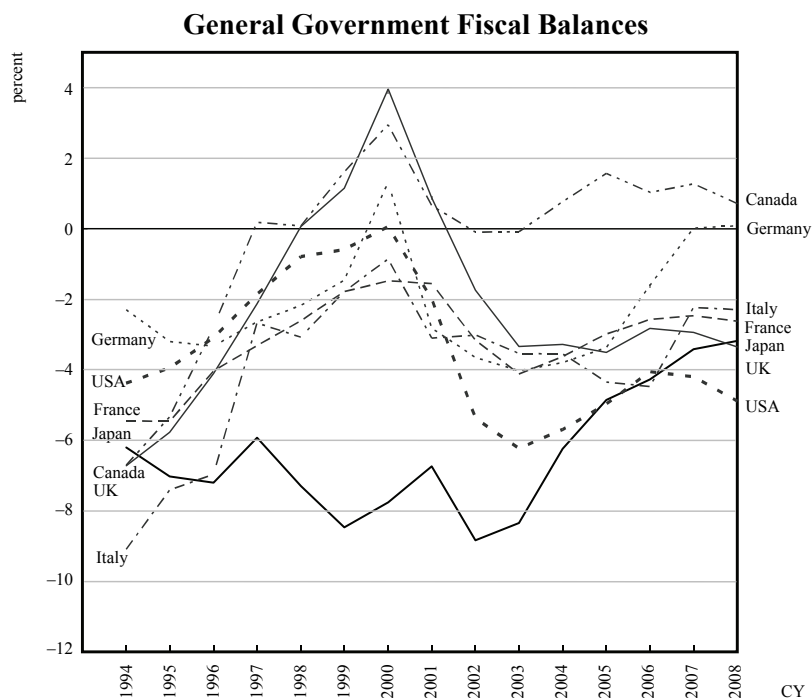
1.1 General government fiscal balances and gross debt

Japan's fiscal balance worsened considerably from the late Nineties to early 2000's. However, it has been improving in recent years as a result of current expenditure reform and an economic upturn. In FY 2008, the general government's fiscal balance is estimated to be -3.2 per cent of GDP and has come near to the -3 per cent of the Maastricht criteria.

On the other hand, Japan's gross debt on general government basis remains on the upward trend with the estimate of 181 per cent of GDP at the end of 2008 which is by far the highest level among G7 countries, though recently the pace of increase is certainly slowing.

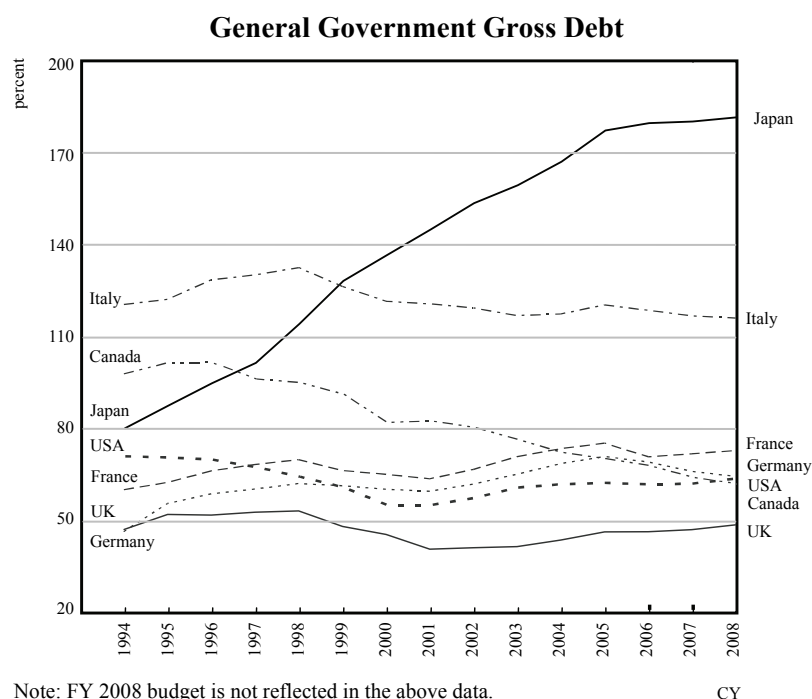
The government debt outstanding on a net basis is estimated at about 91 per cent at the end of 2008, which has also become the worst among the G7 countries excluding Italy. Referring to this data, some people insist Japan's public debt problem is over-emphasized.

Figure 1



Note: FY 2008 budget is not reflected in the above data.

Japanese figures in FY 2005-FY 2007 are adjusted in order to exclude special factors; transfer of debt and asset accompanying the privatization of Public Road Administration in FY 2005, and transfer of the surplus funds of Special Account for Fiscal Loan Program Funds to the Special Account of Government Debt Consolidation Fund in FY 2006 and FY 2007.



Note: FY 2008 budget is not reflected in the above data.

However, nearly half of the difference between the net and the gross basis is comprised of pension insurance premiums which are piled up at present, but are to be paid out in the future, meaning that in the case of Japan the gross basis is more appropriate to measure the real magnitude of public debt problem.

Domestically, the government of Japan set a target on the debt to be serviced by future national or provincial taxes. The amount of such debt outstanding is smaller than that of the general government and expected to reach 147 per cent of GDP or 778 trillion yen at the end of FY 2008.

1.2 General government total outlays and revenues

Japan's current general government total outlays are estimated to account for 36.5 per cent of GDP in 2008. This ranks at the lowest level among OECD countries. On the other hand, the revenues correspond to 32.8 per cent of GDP, which ranks the lowest among them. It is said that the current Japan can be characterized as a country with "low welfare and ultra-low burden". The gap will impose burdens on future generations. It is necessary to keep a balance between benefits and payments so that we will not put off current problems to next generations and will not pose economic burdens on our children and grandchildren.

1.3 Factors for increase in general bonds outstanding

The debt was accumulated in the Nineties which is often called "lost decade". Box 1 explains the reasons by presenting the decomposition of increasing factors of general bonds issued by the central government.

The ratio of general bonds outstanding to GDP has increased from 37 per cent at the end of FY 1990 to 105 per cent at the end of FY 2008, or by 68 per cent point increase (390 trillion yen in money term). 39 per cent of this increase is due to an increase in expenditures particularly on social security benefits, and 36 per cent is due to a decline in tax revenues caused by the economic downturn and tax cuts. Other factors such as succession of debt from privatized companies and bad-loan disposal occupy 13 per cent of the increase. The accumulation of the fiscal gap that existed in FY 1990 shares 13 per cent as well.

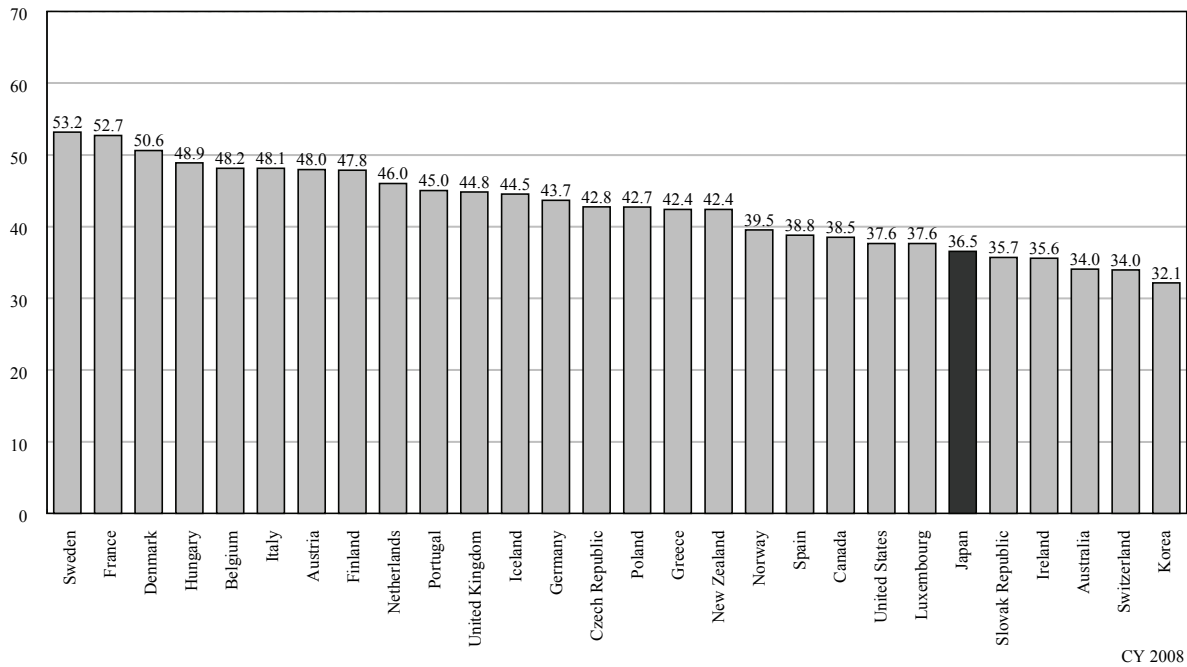
In other words, Japan's fiscal position has worsened dramatically in a quite short time period, because various unfavorable factors occurred simultaneously, such as long-lasting economic slump, bad loan problems and financial system crisis, rapid ageing and so on.

1.4 Ageing population

In Japan, ageing is progressing faster than in any other developed country. As is shown in Figure 3, the ratio of people older than 65 years to the total population is already above 20 per cent in 2005 and is expected to reach 30 per cent by 2025. This is due to the ageing of the baby-boomers who were born in the period of 1947-50 in Japan and to the low birthrate which has become quite serious especially since the Nineties.

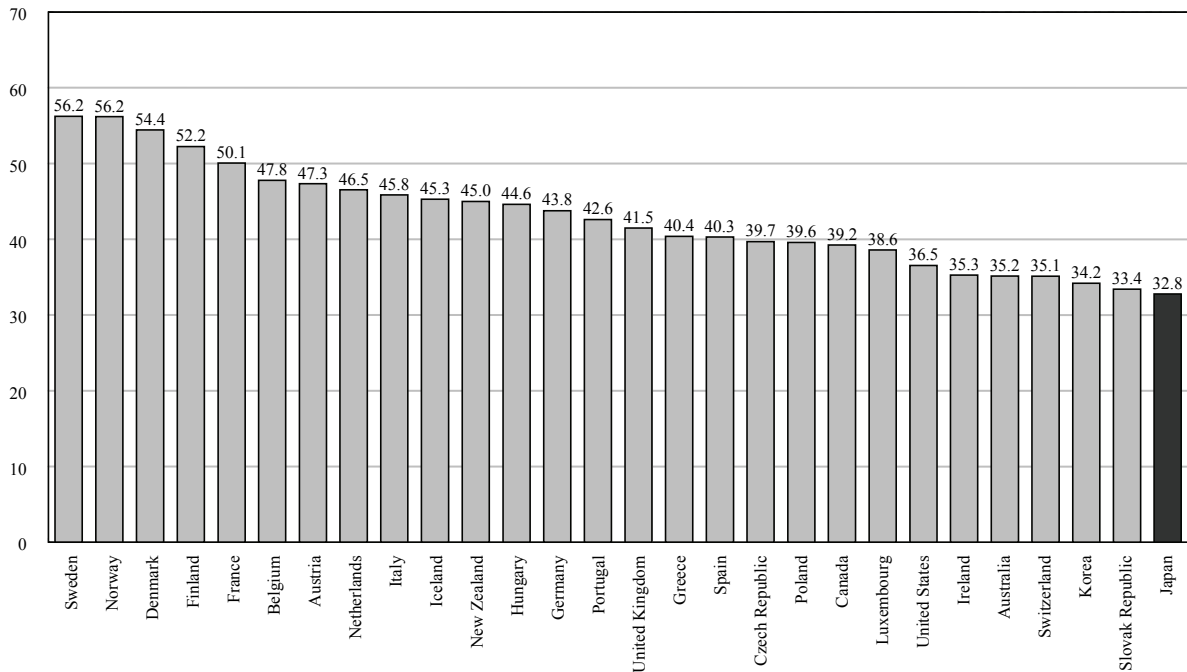
Figure 2

General Government Total Outlays (percent)



CY 2008

General Government Total Revenues (percent)



CY 2008

Source: OECD Economic Outlook 82.

Box 1 The Accumulation of Debt of the 1990s in Japan

Increase in General Bonds Outstanding from FY 1990 to FY 2008: ¥ 390 trillion
(Ratio to GDP FY 1990: 37.0% → FY 2008: 105.0% (+68 percentage points))

(component percentages)

Contribution of Expenditures: ¥ 150 trillion (39%)

Social Security related expenditures: ¥ 100 trillion (28%)

Public works related expenditures: ¥ 60 trillion (15%)

Other expenditures excluding debt redemption: – ¥ 20 trillion (–5%)

Effect of decline in tax revenues: ¥ 140 trillion (36%)

Other Factors (e.g. Succession of debt from JNR, bad-loan disposal): ¥ 50 trillion (13%)

Difference in revenue and expenditure in FY 1990: ¥ 50 trillion (13%)

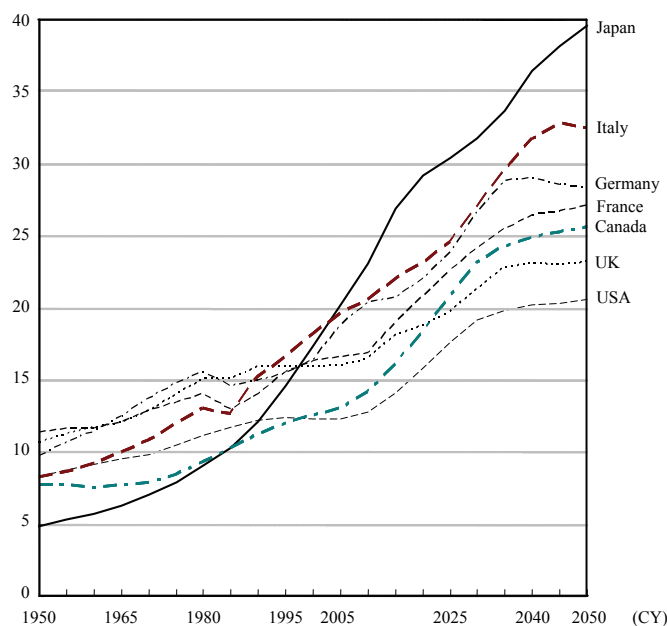
The data before FY 2006 comes from audited statements.

FY 2007 includes supplementary budget.

FY 2008 comes from FY 2008 budget.

Figure 3

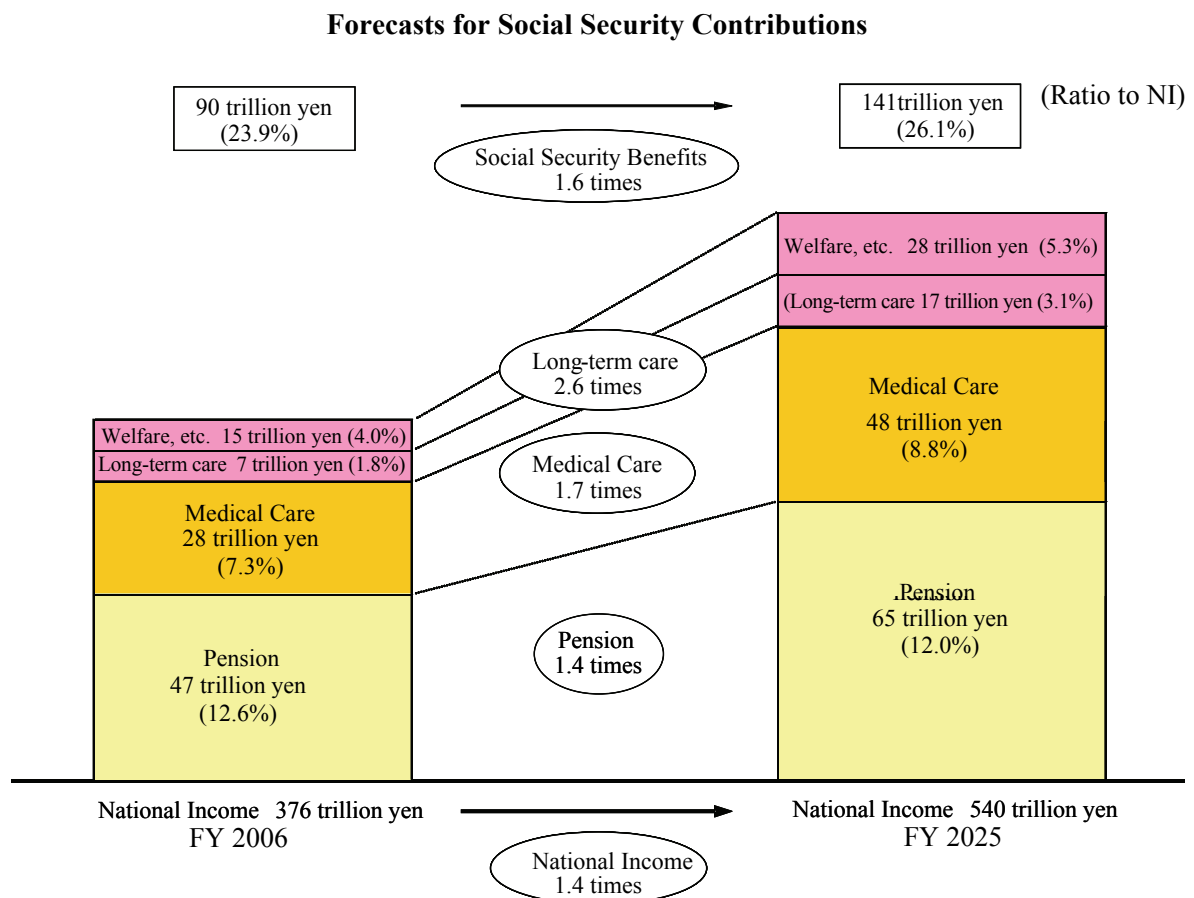
Ratio of People Older than 65 years to the Total Population (percent)



Country	1965	1980	1995	2005	2025
Japan	6.3	9.1	14.6	20.2	30.5
Italy	10.0	13.1	16.6	19.7	24.6
Germany	12.5	15.6	15.5	18.8	23.9
France	12.1	14.0	15.6	16.6	22.6
Canada	7.7	9.4	12.0	13.1	20.9
UK	12.0	15.1	15.9	16.0	19.8
USA	9.5	11.2	12.4	12.3	17.7

Note: Figures for Japan from *National Census* (the Ministry of Internal Affairs and Communications) and *Japanese Future Demographic Projections* (National Institute of Population and Social Security Research, December 2006).
Figures for other countries are based on UN projections.

Figure 4



Source: Projection of Social Security Benefits and Burdens (Estimated in May 2006 by the Health, Labour and Welfare Ministry).

1.5 Forecasts for social security benefits

In line with the rapid ageing of the population, social security benefits in total are estimated to increase by 60 per cent from FY 2006 to FY 2025. Especially among them, the benefit of medical and long-term care shows great increases. It will increase by 3 per cent point to NI during the period (See Figure 4).

2 Efforts toward fiscal consolidation

In such a difficult situation, the government of Japan has been making serious efforts toward fiscal consolidation.

2.1 Roadmap and targets for fiscal consolidation

After FY 2001, the government abandoned the measure of supporting the economy through

Box 2
Roadmap and Targets for Fiscal Consolidation

*(basic policies for economic and fiscal management and structural reform 2006,
 endorsed at the Cabinet meeting in July 2006)*

PHASE 1 (FY 2001-FY 2006) : REFORMS BY THE KOIZUMI CABINET

“NO GROWTH WITHOUT REFORM”

- Make efforts to advance fiscal consolidation under the concept of the integrated reform of the economy and public finance
- Make steady improvements in the primary balance

PHASE 2 (FY 2007-early 2010s)

- Achieve a surplus in the primary balance as a first step toward fiscal consolidation
 - continue fiscal consolidation as in Phase 1 and ensure a surplus in the primary balance of the central and local governments combined by FY 2011
 - aim to achieve a primary balance for the central government as much as possible

PHASE 3 (early 2010s-mid-2010s)

- Decrease the debt-to-GDP ratio at a steady pace
 - ensure surplus in the primary balance of the central and local governments
 - aim at a steady reduction of the central government debt-to-GDP ratio

public expenditures and has launched the basic policy action on integral reform of expenditure and revenues in the “Basic Policies for Economic and Fiscal Management and Structural Reform in 2006 (Basic Policy 2006),” which was endorsed by the cabinet in July 2006.

In the Basic Policy 2006 (see Box 2), the target horizon is divided into three phases; each phase is around 5 years. Phase 1 is from FY 2002 to FY 2006. Phase 2 is from FY 2007 to early 2010s, and Phase 3, to mid-2010s. The government is committing itself to gradual fiscal consolidation with surplus in the primary balance of the central and local governments combined in Phase 2, and steady decrease in the debt-to-GDP ratio in Phase 3.

The Japanese government has regarded the fiscal position of central and local governments combined as a target, not the one of general government. This is because the social security fund in Japan is basically financed by social security premiums or subsidies from the central and local governments, according to each statutory scheme such as pension, medical care, and so on. The subsidies from the governments are taken into account when projecting the governments’ future expenditures. In other words, the deficit of social security fund does not directly lead to the evolution of government debt. It leads to government debt through the governments’ expenditures.

Table 1

Expenditure Reform in Phase 2
(percent of GDP)

	FY 2006	FY 2011		Reduction
		Baseline	After Structural Reform	
Social Security	6.1%	6.7%	6.4%	-0.3%
Personnel Expense	5.9%	5.9%	5.4%	-0.4%
Public Investment	3.7%	3.6%	3.0 ~ 2.7%	-0.9 ~ 0.7%
Other Expenditure	5.3%	5.3%	4.7 ~ 4.5%	-0.8 ~ 0.6%
Total	20.9%	21.5%	19.6 ~ 19.1%	-2.4 ~ 1.9%

Note: Figures are the total for the central and local governments based on SNA.

GDP in FY 2006 is ¥ 513.9 trillion.

GDP in FY 2011 is estimated in ¥ 595.8 trillion, presuming an average annual growth rate of 3 per cent.

Thus, the fiscal position of central and local governments combined properly reflects the increase or decrease of debts which are to be covered by future revenues.

2.2 Expenditure reform plan in Phase 2

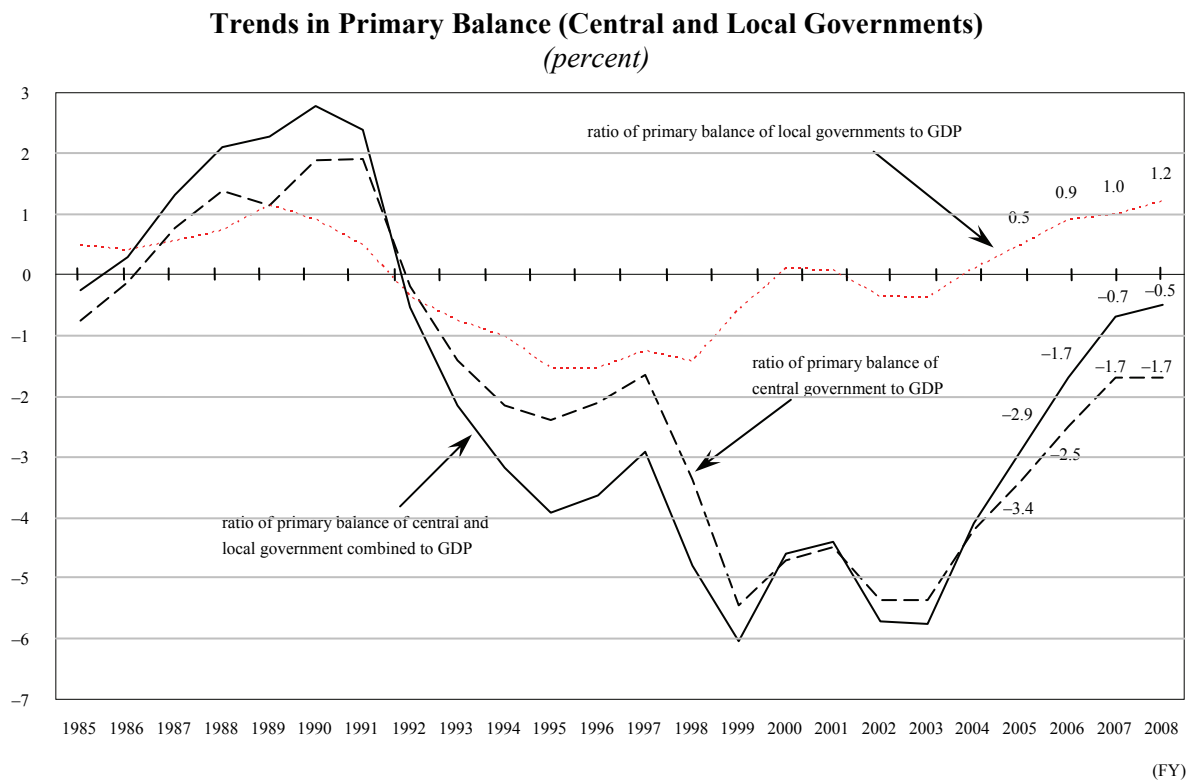
Table 1 presents the expenditure reform in Phase 2. The government sets the objective of achieving a primary surplus in FY 2011 and calculates the size of required adjustment from a baseline projection of expenditures and revenues, and allocates it to each category of expenditure by considering the consolidation efforts in Phase 1. In total, the expenditures of the central and local governments need to be cut by at most 2.4 per cent and at least 1.9 per cent of GDP through FY 2011 while revenues need to be increased by at least 0.4 and at most 0.9 per cent of GDP.

In FY 2007 and beyond, Japan's public finance will be managed by the Basic Policy 2006. In the FY 2008 budget, expenditure trimming included a 3 per cent cut of public investment based on the policy like the FY 2007 budget. But the tax raise has yet to be scheduled.

2.3 Trends in primary balance

As a result of these efforts, our fiscal target, the primary deficit of central and local government combined is estimated to be reduced to -0.5 per cent in FY 2008. This convinces us that the primary surplus by FY 2011 is within reach.

Figure 5



Note: Data of FY 2007 are a projection of the actual achievement, data of FY 2008 a projection.
Source: Cabinet Office.

About a half of the central government revenue is allocated to local governments in the form of subsidies or transfers. As can be seen in Figure 5, local governments have been maintaining primary surplus of more than 1 per cent recently and succeeded in decreasing accumulated debt itself steadily. Therefore, to achieve a primary surplus of the central and local governments combined, it is important to improve the central government's fiscal position.

3 Long-term fiscal projection for Japan

As we are confronted with extremely high levels of debt, ageing population combined with a diminishing number of children, there is increasing controversy surrounding Japan's public finances among administrators, economists and researchers.

One of the key issues discussed is growing concern about fiscal sustainability: What level of debt-to-GDP ratio would cause an upsurge of interest rate? How much of fiscal consolidation do we still have to make? How long does it take until fiscal consolidation achieves the goal?

Under these circumstances, two organizations of the Government of Japan announced long-term fiscal projections last October, which give us some important clues when considering fiscal sustainability.

Table 2

Comparison between the Two Projections

	The Long-term Sustainability of Public Finance	Social Security and Taxation – Multiple Options of Benefits and Burdens
Composer	The Finance System Council of the Ministry of Finance in October 2007	The Cabinet Office and Council on Economic and Fiscal Policy members in October 2007
Characteristic	<ul style="list-style-type: none"> • using the method of EC • focusing on the sustainability of public finance • presenting the size of adjustment required to reach a target of 60 per cent of GDP in FY 2050 	<ul style="list-style-type: none"> • Showing multiple options of benefits and burdens regarding social security and taxation • Presenting the size of adjustment (increase in tax) at FY 2025 required to lower the debt-to-GDP ratio compared to FY 2011
Viewpoint	Future → Present	Present → Future
Assumptions	Given assumptions of macroeconomics (No relation between public finance and macroeconomics)	Using econometric model considering the relation between public finance and macroeconomics
Adjustment	One-time and permanent adjustment required at present time	Accumulated annual tax increase to FY 2025
Advantage	Comparable to EU member states	Quantifying the impact of increasing benefits regarding medical and long-term care

3.1 Comparison between the two projections

One is “The Long-term Sustainability of Public Finance” published by the Financial System Council of Ministry of Finance. The projection was done by exactly the same method as the European Commission has developed and published in 2006. Focusing on sustainability, the projection presents the fiscal adjustment required to maintain a debt-to-GDP level of 60 per cent in FY 2050. As is well known, the adjustment is calculated back from the future fiscal position and it is a one-time but should have a perpetual effect. It is acknowledged that one of the biggest merits utilizing this method is the availability of cost of delay and international comparability.

On the other hand, the projection made by the Cabinet Office focuses on the increase in public expenditure needed for social security benefits, particularly medical and long-term care to stay in line with ageing population. The projection covers from 2012, the starting point of Phase 3, to 2025 when Japan is expected to meet the first peak of demands for medical and long-term care because of all baby-boomers then alive reaching 75 years old and more. It presents a trade-off relationship between benefits and burdens as a choice and indicates the size of required fiscal adjustment as an increase in taxes. The adjustment presented is an accumulated tax increase implemented every year to FY 2025. The merit for this projection is to make it possible to quantify the impact of increasing fiscal costs arising from demographic change.

Box 3
The Long-term Sustainability of Public Finance (Assumptions)

Assumption (given)

Case 1		2007-2011	2012-2032	2033-2050
	Nominal GDP growth rate	3.0 (average)	1.6	1.0
	Nominal long-term interest rate	3.2 (average)	3.0	
	Inflation rate	1.8 (average)	1.0	

Case 2 Compared to Case 1, growth rates of nominal GDP are 1 percentage point higher. (Long-term interest rates are the same as Case 1).

		2012-2032	2033-2050
	Nominal GDP growth rate	2.6	2.0

Demographics

Based on the medium variant of “Population Projections for Japan: 2001-2050” (estimated in January 2002 by the National Institute of Population and Social Security Research):

2006: 127.74 → 2025: 121.14 → 2050: 100.59 (million people)

3.2 The long-term sustainability of public finance (assumptions)

Assumptions in the *Long-term Sustainability of Public Finance* published by the Ministry of Finance are presented in Box 3. This data comes from other mid- or long-term projections previously announced by other government department.

In Case 2, nominal GDP growth rates are set 1 per cent point higher than in Case 1 with others same. This case takes into account the insistent but invalid criticism which insists the government’s assumptions are usually too prudent. Therefore, in Case 2, the difference between nominal interest rates and nominal growth rates is 0.4-1 per cent, which is quite favorable condition for the public finance.

The demographics are an assumed medium variant from *Population Projections for Japan: 2001-2050*, estimated in January 2002 by National Institute of Population and Social Security Research. In this projection, the population of Japan will decrease by more than 20 per cent by 2050.

3.3 The long-term sustainability of public finance (method)

The method and the sustainability gap indicators, S1 and S2, are the same as the EC’s.

In the base line scenario, other expenditures than social security’s and revenues are basically extended in proportion with GDP. In the MTO scenario, the perfect achievement of the “Basic

Box 4 **The Long-term Sustainability of Public Finance (Method)**

Scenario

Baseline scenario

Expenditures regarding social security benefits: Projected based on the demographics

Other expenditures and revenues: Constant as a share of GDP and equal to the last known year

Mid-term Objective (MTO) scenario

In the case that the MTO is achieved. (The primary balance of the central and local governments combined in FY 2011, as committed in Basic Policies 2006).

Sustainability indicators

The size of the permanent budgetary adjustment that will allow for one of the following conditions:

- Reaching a target of 60 per cent of GDP in 2050 (the S1 indicator)
- Fulfilling the inter-temporal budget constraint over an infinite horizon (the S2 indicator)

Cost of a delay in budgetary consolidation

Postponing of the budgetary adjustment by 5 years

Policy 2006” is assumed, that is, the primary balance of the central and local governments combined will be achieved in FY 2011.

3.3 The long-term sustainability of public finance (results)

The sustainability gap indicator S1 is 5.5-4.5 per cent according to the baseline scenario. In fact, in this scenario, the debt-to-GDP ratio of central and local governments will rise to as much as 399 per cent in FY 2050. Long before reaching it, the public finances of Japan will have gone into bankruptcy.

In MTO scenario, the S1 indicator reaches 4.1 to 3.2 per cent. This result is shocking to us since our efforts to achieve the primary balance are found to have little effect on long-term fiscal sustainability.

The cost of five years delay is calculated to be 0.5-0.7 per cent. This is quite significant in Japan due to the fact that it is larger than revenue generated from 1 percentage point increase of the consumption tax, or Japanese VAT which is currently just 5 per cent.

In case of Japan, the size of S1 indicator and that of S2 indicator is almost the same. This means that under the assumption in this projection, the debt-to-GDP ratio will not increase semi-permanently after FY 2050 if the extremely high level in the initial position could be lowered to the Maastricht criteria in FY 2050.

Box 5
The Long-term Sustainability of Public Finance (Results)

The sustainability gap calculations in the “Baseline Scenario” and the “MTO Scenario”

Baseline Scenario
(percent of GDP)

	S1	Cost of Delay (S1 – S1')		S2
Case 1	5.5%	0.7%		5.6%
Case 2	4.5%	0.7%		4.6%

Decomposition of the S1 indicator

CASE 1 (5.5%): IBP 2.8%, DR1.3%, LTC 1.4%

CASE 2 (4.5%): IBP 2.8%, DR1.3%, LTC 1.4%

MTO Scenario
(percent of GDP)

	S1	Cost of Delay (S1 – S1')		S2
Case 1	4.1%	0.7%		4.2%
Case 2	3.2%	0.5%		3.2%

3.4 Social security and taxation – multiple options of benefits and burdens (method)

On the other hand, two scenarios are made in the projection by the Cabinet Office. One is a “current benefit scenario”, in which the current benefit level per person on medical and long-term care is maintained through the projection term. The other is a “benefit reduction scenario”, in which the burden level per person of FY 2011 is maintained through FY 2025. In each case, fiscal adjustment required is presented as an accumulated increase in tax, not as a primary balance improvement required.

With regard to economic assumptions, two GDP growth rates are assumed again, *i.e.* 3.2 per cent on average in high-growth case and 2.1 per cent on average in low-growth case. These rates are about ½ percentage point higher in each case than in the long term sustainability analysis by MOF.

The size of the required adjustment in this projection by the Cabinet Office also satisfies the condition of lowering the debt-to-GDP ratio compared to FY 2011, which would be easier than the objective planned in Basic Policy 2006.

Box 6**Social Security and Taxation – Multiple Options of Benefits and Burdens (Method)****• Present Multiple Options of Benefits and Burdens regarding social security and taxation****Current Benefit Scenario**

In the case that the current benefit level per person is maintained through the projection term

Benefit Reduction Scenario

In the case that the burden level per person of FY 2011 is maintained at FY 2025

• Assumptions (Two scenarios)**High-growth Case (Nominal GDP Growth Rate: 3.2% on average)****Low-growth Case (Nominal GDP Growth Rate: 2.1% on average)****• Under the conditions mentioned above, measure the size of the annual tax increase required to lower the debt-to-GDP ratio compared to FY 2011****3.5 Social security and taxation – multiple options of benefits and burdens (results)**

As are presented in Table 3, in the low-growth case under the current benefit scenario, the fiscal adjustment required in FY 2025 is 4.6 per cent of GDP, which is the largest in this projection. On the other hand, in the high-growth case under the benefit reduction scenario, the adjustment required is 1.5 per cent of GDP, the smallest.

In this projection, the impact of an increase in pension benefits is ignored. This is because in the 2004 pension reform, the system of macro economic indexation was introduced and public expenditures on pensions will not increase compared to the scale of the economy.

3.6 Implication of results

The results of the two projections can be summarized as follows.

First, it is far from sufficient to just achieve a primary balance, which is committed as the current MTO, for the public finances of Japan. To ensure long-term sustainability of public finance it is urgent to reduce the debt-to-GDP ratio at a steady pace and then to aim to achieve fiscal balance like EU member states.

Regarding this point, according to our unofficial projection of another scenario, in which the MTO is replaced by the achievement of the fiscal balance of the central and local governments combined under certain assumptions, S1 becomes nearly equal to 1 per cent. Given the significantly large gap indicators, it is believed that measures to increase revenues, notably tax, are inevitable and should be taken as soon as possible.

Table 3

Social Security and Taxation – Multiple Options of Benefits and Burdens (Results)
Fiscal Adjustment Required in FY 2025

		Total Tax Increase	Primary Balance Improvement	
		<i>(trillion yen)</i>	<i>(trillion yen)</i>	<i>(share of GDP)</i>
Current Benefit Scenario	Low Growth	28.7	23.8	4.6%
	High Growth	14.4	12.5	2.4%
Benefit Reduction Scenario	Low Growth	24.1	20.4	3.9%
	High Growth	8.2	7.6	1.5%

The figures above are assessed on the basis of FY 2007 and assume achievement of primary balance for 2011 as committed in Basic Policies for Economic and Fiscal Management and Structural Reform 2006.

Additionally, if higher rates of GDP growth (say 2-3 per cent or more) would be achieved, the size of fiscal adjustment required would be considerably smaller, implying that enhancing economic growth shall be a key factor for fiscal consolidation as well.

4 Issues on fiscal consolidation in Japan

4.1 Views on Fiscal Sustainability in Japan

There may be no agreed-upon definition for a sustainable fiscal position. It must vary with the circumstances of each economy.

In case of Japan, the historically high level of the debt-to-GDP ratio does not necessarily imply that sustainability problems (e.g. facing difficulty in absorption of government bonds) will arise in the near future, due to the existence of high level of domestic savings and continued current-account surpluses.

Also, the government's commitment to fiscal consolidation is firm enough and recognized by markets. Owing to these factors, long-term interest rates have been stable even during the economic recovery since 2002.

However it is true that Japan's public finance faces various risks in the long-term. Future reduction of household assets due to population ageing may lead to difficulties in absorbing government bonds domestically. Economic contraction and less tax revenue may occur due to a reduction of the potential growth rate. Moreover, it may become impossible to maintain the current social security costs due to the declining birth rate and population ageing.

4.2 Important points to fiscal consolidation (actions for Japanese government)

From Japan's past experiences, there are some important points for a highly indebted country in order to successfully achieve fiscal consolidation.

First, when planning fiscal policy, it is important to take step-by-step approach. If the government resorted to rough-and-ready measures, it would face difficulties along the way and face higher costs in the end. We should set realistic goals that can be reached through effort and reexamine these on a timely basis.

Second, the economy and fiscal policy are considered in their totality. Maintenance of economic growth and stabilization of interest rates are essential for fiscal consolidation, and in fact without them fiscal consolidation would become much more difficult. The more highly-indebted, the more careful management is required.

Third, by aggressive information disclosure and the government's persistent PR activities, the people's knowledge and understanding of the public finance can be enhanced and an environment can be created in which even unpopular political decisions can be made smoothly toward fiscal consolidation.

APPENDIX 1 METHODOLOGY FOR SOCIAL SECURITY CONTRIBUTION ESTIMATE

- Based on “Projection of Social Security Benefits and Burdens” until FY 2025. From FY 2006 to FY 2025 public subsidies are estimated to increase as follows:

trillion yen (of NI)

	FY 2006	FY 2011	FY 2015	FY 2025
Burdens	82.8 (22.0%)	101 (23.3%)	114 (24.8%)	143 (26.5%)
Public Subsidies	28.8 (7.7%)	36 (8.4%)	41 (8.9%)	
Pension	8.4 (2.2%)	12 (2.7%)	13 (2.8%)	
Medical care	11.2 (3.0%)	13 (3.0%)	15 (3.4%)	
Long-term care	3.8 (1.0%)	5 (1.1%)	6 (5.9%)	
Premiums	54.0 (14.4%)	65 (14.9%)	73 (15.9%)	

Source: Projection of Social Security Benefits and Burdens (MHLW, May 2006).

- From FY 2026 to FY 2050 assume as follows:

Pension: Based on *Fiscal Recalculation of Pension (2004)* (MHLW), which estimates total payments of salary and pensions and pension contributions to FY 2100, adjust figures according to the economic assumptions.

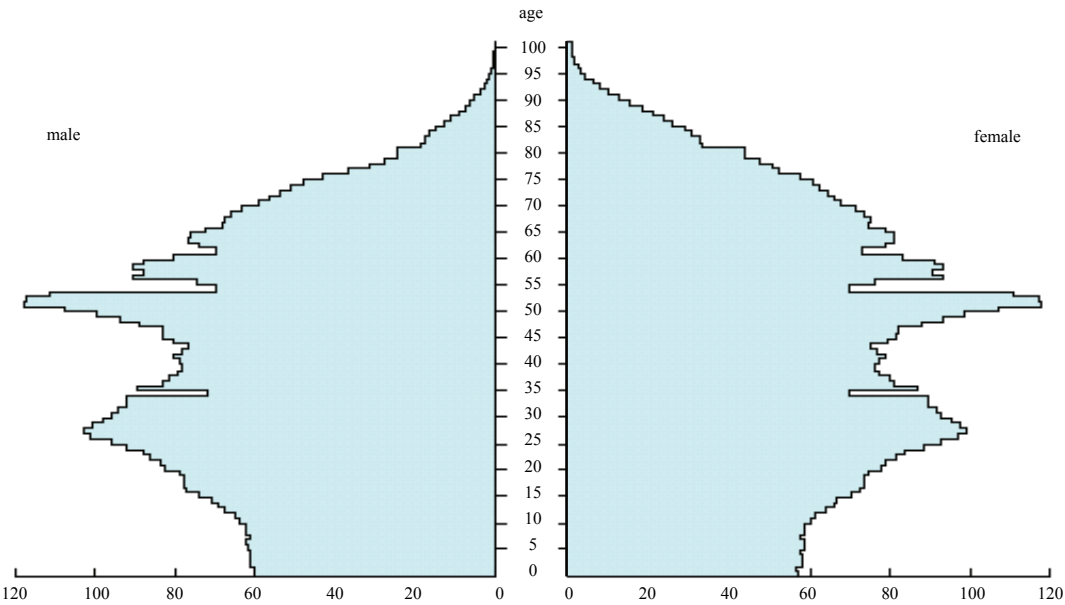
Medical care: Based on the demographics in *Population Projections for Japan* and the growth rate of medical care cost per head (for young people: 2.1 per cent; for the elderly: 3.2 per cent (average performance level from FY 1995 to FY 1999), calculate public subsidies by age group (by 5 years). Assume that reform effects of health-care system reform in FY 2006 last to FY 2050.

Long-term care: Classifying into care facility and at-home care broadly, based on the percentage of certification of long-term care, estimation of service use, the demographics in *Population Projections for Japan*, growth rate (2.1 per cent per year) and the portion funded by central and local governments, calculate public subsidies by age group (by 5 years) and by sex.

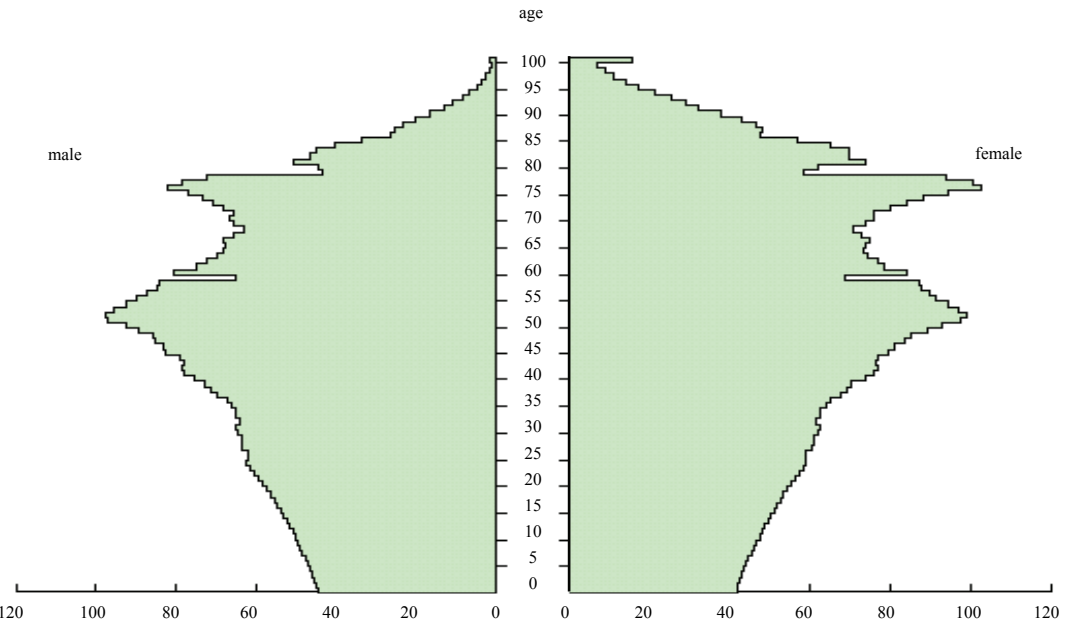
Other welfare: Based on the numeric value on FY 2025, stretch by nominal growth rate. Assume that governmental pension equals 0 from FY 2026 onward.

APPENDIX 2
JAPANESE FUTURE DEMOGRAPHIC PROJECTIONS

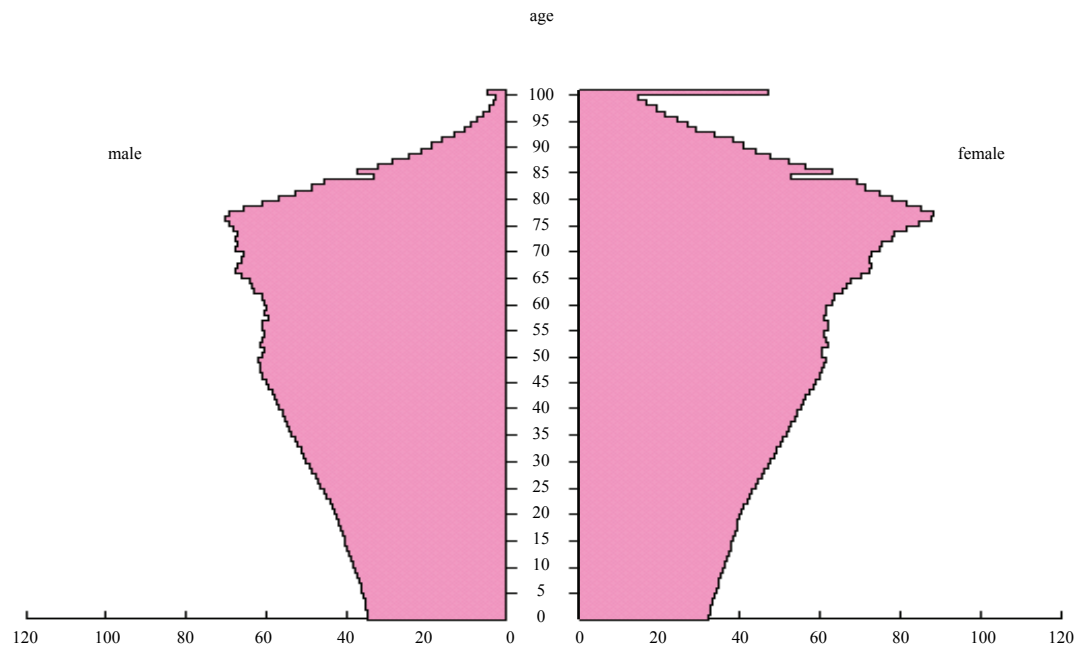
Population Pyramid: Medium Variant, 2000
(tens of thousands)



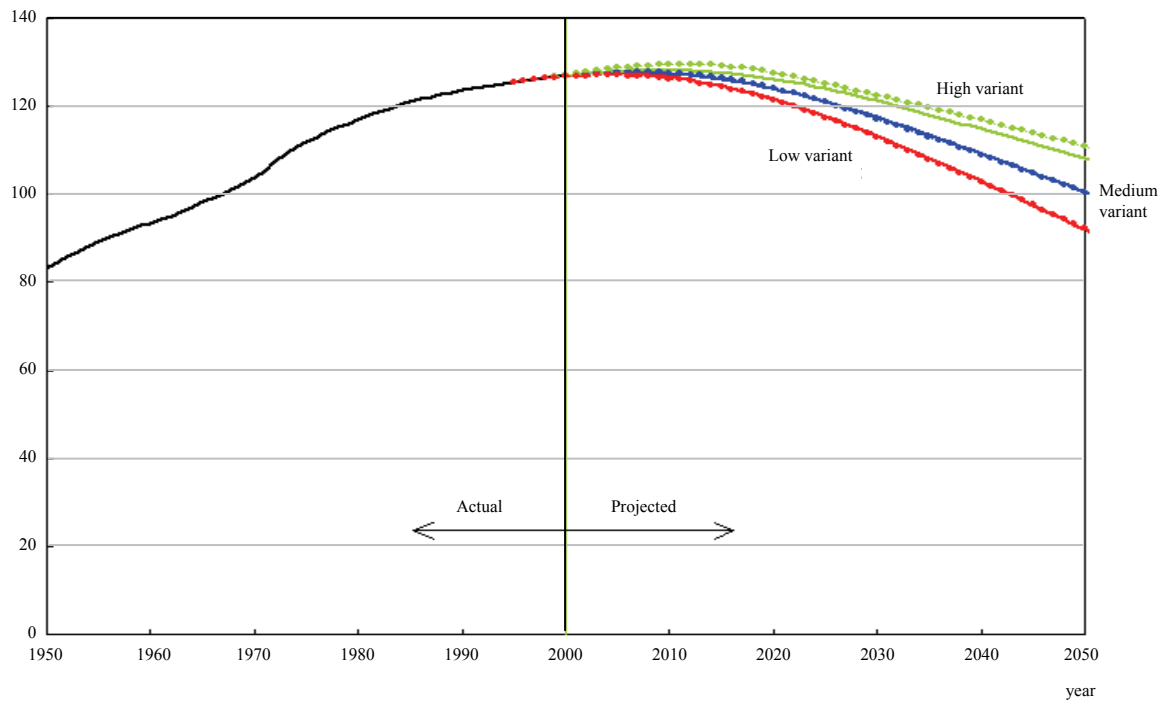
Population Pyramid: Medium Variant, 2025
(tens of thousands)



Population Pyramid: Medium Variant, 2050
(tens of thousands)



Actual and Projected Population of Japan, 1950-2050
(millions)



Note: Dotted lines indicate previous projections.

Source: National Institute of Population and Social Security Research (2002), *Population Projections for Japan*, January.

APPENDIX 3 COMPARING THE RESULTS CALCULATED FOR JAPAN WITH THOSE FOR EU COUNTRIES

Results of the Sustainability Gap Calculations in the MTO Scenario
(percent of GDP)

Country	S1	IBP	DR	LTC	Structural Primary Balance (2005)	Debt-to-GDP Ratio (2005)
Luxembourg	3.9	0.5	-1.8	5.2	-1.2	6
Slovenia	3.8	0.0	-0.6	4.4	0.2	29
Portugal	2.5	-1.7	0.0	4.1	-2.5	64
Cyprus	2.3	-1.8	-0.1	4.3	0.5	70
Czech Republic	2.2	0.2	-0.5	2.6	-0.2	31
Spain	2.2	-0.8	-0.5	3.5	3.1	43
The Netherlands	2.2	-0.8	-0.3	3.3	3.6	53
Hungary	1.7	-1.3	0.0	3.1	-2.5	58
Ireland	1.7	-0.7	1.0	3.5	3.1	28
Belgium	1.3	-2.7	0.3	3.7	4.5	93
United Kingdom	1.0	-0.6	-0.3	1.9	-1.1	43
Denmark	0.7	-1.5	-0.8	3.0	7.1	36
Latvia	0.6	0.6	-0.9	0.9	0.5	12
Lithuania	0.3	0.4	-0.8	0.7	-0.3	19
Germany	0.1	-1.7	0.1	1.7	-0.3	68
Slovak Republic	0.1	-0.5	-0.5	1.1	4.2	35
France	0.0	-1.8	-0.1	1.8	-0.5	67
Austria	-0.7	-1.6	-0.1	1.0	1.7	63
Finland	-0.7	-2.6	-1.5	3.3	4.7	41
Italy	-1.0	-2.9	0.6	1.3	0.6	106
Greece	-1.9	-2.8	0.5	0.4	-0.3	108
Sweden	-1.9	-2.3	-1.0	1.5	4.2	50
Malta	-2.5	-3.2	0.1	0.6	0.9	75
Estonia	-2.6	0.0	-1.1	-1.5	1.7	5
Poland	-4.0	-1.3	-0.3	-2.5	-0.2	43
Japan	Case 1	2.7	1.3	0.1	-0.6	141
	Case 2	1.6	1.6	0.0		

IBP = Initial Budgetary Position, DR = Debt Requirement in 2050, LTC = Long-term Change in the Primary Balance. Structural primary balance and debt-to-GDP ratio are projected at the end of FY 2007 for Japan.

Source: European Commission, *The Long-term Sustainability of Public Finance in the European Union*.