

**The 28<sup>th</sup> Medium-term Forecast  
of the Japanese Economy  
Fiscal Years 2001-2010**

**The Road to  
Economic Revitalization**

*-- Towards Private Demand Led Sustainable Growth --*

**December 2001**

**Japan Center for Economic Research**

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President: Naohiro YASHIRO

Executive Secretary: Takashi IDE

Director (Economic Analysis Department): Takashi KAMIYAMA

Japan Center for Economic Research

(Nihon Keizai kenkyu Center)

Nikkei Kayabacho Bldg.,

2-6-1, Nihombashi-Kayabacho,

Chuo-ku, Tokyo 103-0025

JAPAN

TEL : 03-3639-2832

FAX : 03-3639-2838

Homepage Address : <http://www.jcer.or.jp>

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# The 28<sup>th</sup> Medium-term Forecast Group

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**Research Director :** Masanobu UMEDA (Senior Economist)

**Assistant Director :** Shuko SADAMOTO (Economist)

**Coordinator :** Kaori NIKAMI

**Associates :**

Naoyuki INOUE

Shigeshi KAKINUMA

Kenichiro GYOTEN

Koki SASAMORI

Yasumasa NAGAE

Takeshi NISHIYAMA

Tomokazu YAMAKI

Masahiro YOSHIDA

Atsushi OGAWA

Tomohiro KINUGAWA

Shota KOBAYASHI

Junya SANO

Hiroyuki NAKAZAWA

Kotaro HIDAKA

Ryo YOKOYAMA

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## The 28<sup>th</sup> Medium-term Forecast of the Japanese Economy (Fiscal Years 2001-2010)

### The Road to Economic Revitalization -- Towards Private Demand Led Sustainable Growth --

(Release Date: November 29, 2001)

#### Summary

1. In the "Gradual Reform Scenario" where a partial structural reform takes place, after the negative growth in fiscal 2001-2002, the economy assumes a cyclical pattern where annual average growth is only about 1% -- quite a weak performance. It will be difficult for the central and local governments to achieve a surplus in their primary balances, and the long-term debts of the government as a share of nominal GDP will continue to rise.
2. In the "Economic Revival Scenario" where a comprehensive and coherent economic reform takes place, economic correction in the fiscal years 2001-2003 will be even graver than the "Gradual Reform Scenario". However, after fiscal 2004, when the reforms have taken root and the shackles preventing economic growth have been removed, we can anticipate an increase in the potential growth rate to about 2% in fiscal 2010, marking a return to a growth path. Moreover, by this year the fiscal stability will be restored.
3. We need to be sensitive to the fact that the "Gradual Reform Scenario" lies side-by-side with several risk factors. If there are no brakes applied to the long-term debts of the government as a share of GDP, long-term interest rates will rise above what the economy can bear and may deal a hard blow to the economy. If the bad loans situation is allowed to continue into the long-term, there will be problems associated with the non-functionality of the financial institutions as a financial intermediary, and the financial system will become vulnerable to external shocks. Also, if market confidence cannot be restored, then there is danger that anxiety in the financial system will return.
4. What is most important is that we do not lose the momentum towards reform that began when Koizumi came to power and that we successfully tie this to a full-fledged revival of the economy. In order for the private sector to enhance their productive efficiency through free competition, and to foster an environment where new businesses can be started easily, the following is gravely needed. 1) A speedy clearing up of the bad loans problem, 2) a comprehensive regulatory reform that focuses on deregulation that encourages demand creation, and 3) reform in the special public corporation system. In addition, so that the population will be more agreeable to this reform, it is vitally important to assuage the anxieties about the future of the household. To reach this end, a blueprint for fiscal structural reform, and for the medium to long-term path for social security reform should be promptly drawn and shown to the public.

## 1. Two Scenarios

It has now been seven months since the Koizumi government, bearing the banner, "Structural Reforms without Sacred Cows" was formed. Although a "Reform Schedule" has been announced, the specific procedures or timelines defining the medium term path of the reform have not yet been released and remain unclear to the public. Even if the structural reforms are to be further discussed in the future, we do not know at this stage to what extent the reforms will advance in the medium term.

We consider two scenarios. One is the "Gradual Reform Scenario" that describes the Japanese economy in the medium term when reforms will be carried out only partially. The other "Economic Revival Scenario" is one that assumes that a more aggressive policy with a more comprehensive reform plan will be carried out. Looking out to fiscal 2010, in this exercise we try to determine the conditions that the economy will have to meet to recover under both scenarios.

The assumptions we made for our "Gradual Reform Scenario" are 1) a gradual resolution to the bad loan problem (taking seven years for the situation to be fully normalized), 2) a delay in the fundamental reform of the social security system, 3) a partial implementation of economic legislation and regulatory reform, and 4) a delay in the fundamental reform of the special public corporation system.

In comparison, for the "Economic Revival Scenario" we assume the following: 1) the bad loan problem will be normalized within three years as originally held by the government, 2) a timely release (by 2003 at the latest) of a blueprint for reforms in the areas of the health insurance and public pension systems, 3) announcement of various policies promoting the social advancement of women, 4) the complete implementation of the "Regulatory Reform of the Six Priority Areas" and policies to enhance the use value of land in the large cities, and 5) the privatization or elimination by fiscal 2005 of the Public Highway Corporation and the Government Housing Loan Corporation.

For the reform in health insurance, we assume an introduction in fiscal 2007 of a measure to limit the amount of national healthcare expenditures per se. As for the reform in the public pension plan, in order to avoid an excess burden on the currently employed, and to ensure the long-term stability of the system, we impose the following change: for new participants under the age of 20 as at 2010, the employee pension plan (the second tier portion of their pension plan) will be shifted to a funded system. The expenses incurred in the shift will be dealt with after fiscal 2010, when we expect to see some benefits of fiscal consolidation.

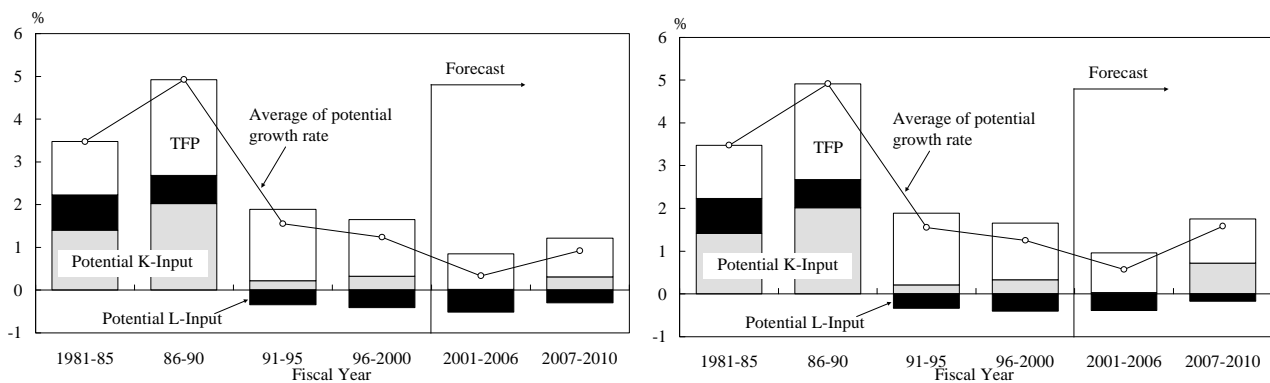
As for the fiscal situation, we assumed for both scenarios that public investment as a share of GDP would fall (from 7.1% in fiscal 2000 to about 4% by fiscal 2010) and that there would be a gradual hike in the consumption tax rate (beginning from fiscal 2005 with the rate in fiscal 2010 to be 10%). In the "Economic Revival Scenario" in addition to these, we also assume a reform in the social security system (health insurance), an increase in growth (and thus tax revenues), and that we see some effects of a reform in the special public corporation system.

## 2. Medium-term Growth Potential by Scenario

### [Gradual Reform Scenario]

In this scenario, we see the potential growth rate of the economy in the fiscal 2001- 2006 period falling to 0.3% and stagnating at far below 1%. This is because the contribution of capital input and technological change (=TFP) will decline, and the negative contribution of labor input will increase. For fiscal 2007-2010, capital input and technological change will recover somewhat and the negative contribution of labor input will shrink. Even so, the recovery in the economy will be unimpressive and just under 1% (Figure 2-1-(1)). As for the GDP Gap (Figure 2-2-(1)), after expanding up to fiscal 2002, it will fall, reflecting the economic recovery after fiscal 2003.

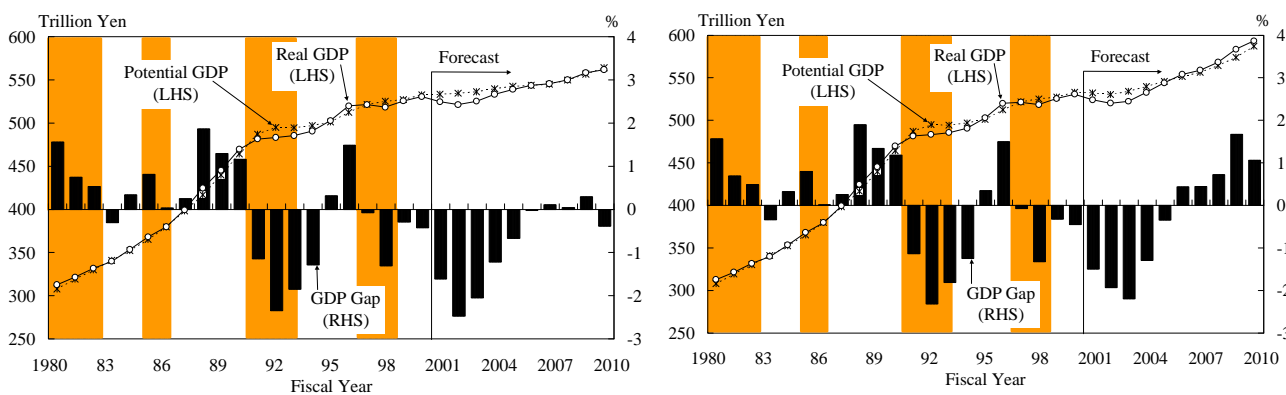
**Figure 2-1. Factor Decomposition of Potential GDP Growth Rate**  
 (1) Gradual Reform Scenario (2) Economic Revival Scenario



- [Notes] 1. Potential L-Input = Labor force × (1 – NAIRU) × Potential total working hours  
 2. Potential K-Input = Private fixed net capital stock × NAICU

[Sources] Cabinet Office "Annual Report on National Accounts", Ministry of Health, Labour and Welfare "Monthly Labour Survey", Japan Center for Economic Research "JCER Net Stock"

**Figure 2-2. Difference of Real GDP Growth from Potential Growth**  
 (1) Gradual Reform Scenario (2) Economic Revival Scenario



- [Notes] 1. GDP Gap (%) =  $\{ (\text{Real GDP} - \text{Potential GDP}) / \text{Potential GDP} \} \times 100$   
 2. Shaded areas indicate periods of recession (according to the Cabinet Office).

[Sources] Cabinet Office "Annual Report on National Accounts", Ministry of Health, Labour and Welfare "Monthly Labour Survey", Japan Center for Economic Research "JCER Net Stock"

### **[Economic Revival Scenario]**

The potential growth rate will be a lackluster 0.6% on average between the years of fiscal 2001-2006. However, for fiscal years 2007-2010, it will recover to the 1.6% level on average, and in the latter half will be close to 2% (Figure 2-1-(2)). This is helped in part by the negative contribution of labor input showing a good decline as female labor participation is expected to increase. In addition, capital input and technological change are also expected to be contributing factors. The effects of technological change will be further enhanced by the effects of deregulation. As for the GDP Gap, after growing up to fiscal 2003, the gap should begin to shrink and be all but eliminated by fiscal 2006. For fiscal 2007-2010, the actual growth rate and the potential growth rate will both grow to about the 2% level and will be in balance, and there will even be a small positive gap (Figure 2-2-(2))

## **3. The Key to Economic Revival – a Revived Financial System**

### **3-1. The Deteriorating “Intermediary” Function of Financial Institutions**

According to the DI (Diffusion Indices) indicating the Lending Attitude of Financial Institutions as perceived by the respondents to the BOJ’s TANKAN Survey, respondents perceived an improvement in their lending stance after the injection of public capital in March 1999. For large and larger-scale medium sized companies, more respondents thought the lending environment was “accommodating” than did not. However, for small and medium-sized firms --although there has been some improvement -- more companies felt the environment was “severe” than “accommodating”, and this has worsened again since the second half of 2001.

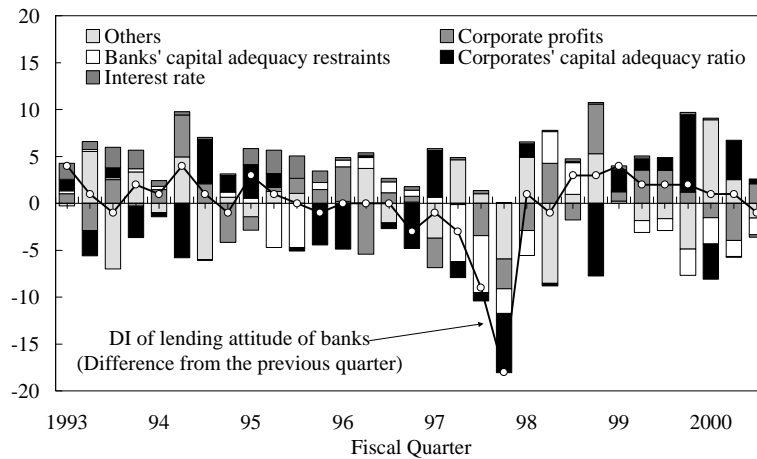
Here, we focus on the DI indicating the perception of small and medium-sized non-manufacturers of the Lending Attitude of Financial Institutions and do a quantitative analysis with these four determinants: the contracted interest rate as a measure of the financial condition, two indicators from the corporate side – corporate profits and their real capital adequacy ratios -- and the banks’ capital adequacies. According to our findings we see that the banks’ capital adequacy restraints have put downward pressure on the Lending Attitude of Financial Institutions as perceived by small and medium-sized non-manufacturing enterprises (Figure 3-1) even after fiscal 1999. Moreover, if we then estimate the investment function of small and medium sized non-manufacturing enterprises, we see that that the Lending Attitude of Financial Institutions is a significant determining factor of investment fluctuations. We can infer from this result that for the small and medium-sized non-manufacturers, the financial intermediary function of the financial institutions has not yet been returned to normal, and this is having a negative effect on their investment activities (Table 3-1).

### **3-2. Medium-term Outlook for Bad Loan Disposal**

#### **[Gradual Reform Scenario]**

In this Gradual Reform Scenario, we assumed that the bad loans problem would be resolved according to the timetable of the “Reform Schedule” as set out by the government. That is, loans that are classified as being “In danger of bankruptcy” or below will be cleared within two years (newly emerging ones in three years), and for loans “Needing attention”, a higher share will be reserved for their losses than are currently.

Figure 3-1. Contribution to DI of Lending Attitude of Banks



[Sources] Bank of Japan " TANKAN : Short-term Economic Survey of All Enterprises in Japan " and " Monthly Report of Recent Economic and Financial Developments", Ministry of Finance "Financial Statements Statistics of Corporations by Industry , Quarterly", Japanese Bankers Association " Analysis of Financial Statements of All Banks"

Table 3-1. Investment of Small and Medium Sized Enterprises and Lending Attitude of Financial Institutions

	Small & Medium sized, Manufacturing		Small & Medium sized, Non-manufacturing	
	Coefficient	(t-statistic)	Coefficient	(t-statistic)
Constant	30.3957	( 3.56 )	20.1228	( 3.12 )
Ratio of Business Investment to Cash Flow	-40.6203	( -4.11 )	-25.4107	( -3.91 )
Cash Flow	0.4325	( 3.10 )	0.3165	( 2.28 )
Lending Attitude D.I.	0.4964	( 3.91 )	0.6120	( 6.21 )
Adjusted R-squared	0.5147		0.5769	
Durbin-Watson stat	0.2422		0.3723	
Sample (Calendar year)	1981:4Q ~ 2001:2Q		1983:4Q ~ 2001:2Q	

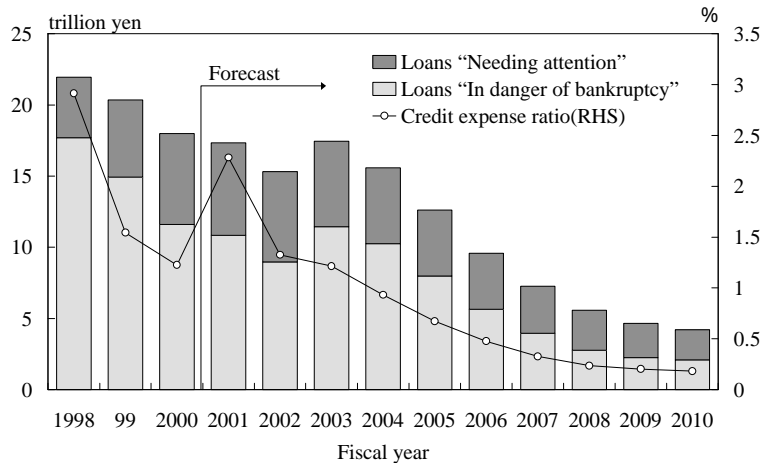
[Notes]1 . Cash flow = Ordinary profit/2 + Depreciation

2 . Estimating method is as follows.

$$\text{Business investment(year-on-year)} = C + (\text{Ratio of business investment to cash flow}(-4)) + (\text{Cash flow (year-on-year)} \cdot (-2)) + (\text{DI}(-2))$$

[Sources] Ministry of Finance "Financial Statements of Corporations by Industry (Quarterly)", Bank of Japan "TANKAN"

Figure 3-2. Bad Loans and Credit Expense Ratio (Gradual Reform Scenario)



[Sources] Bank of Japan " Developments in Profits and Balance Sheets of Japanese Banks in Fiscal 2000 and Banks' Management Tasks", Japanese Bankers Association " Analysis of Financial Statements of All Banks", Financial Services Agency " The Status of Risk Management Loans held by All Banks in Japan"



Here we estimate how long it will take for the major banks to be cleaned up of their bad loans, using the Financial Supervisory Agency's (FSA) "Probabilities of shifts in debtor classifications" and making some other conservative assumptions. The results of the estimation are shown in Figure 3-2. According to this, we see that for the credit expense ratio to fall to 0.2 to 0.3% of what is considered normal levels and for the bad loans to fall to half of the fiscal 2001 levels will take until fiscal 2007

#### **[Economic Revival Scenario]**

In the Economic Revival Scenario, we believe there should be a literal "return to normalcy within three years". Specifically, under a stringent appraisal of loans, there will within the next one or two years, be adequate provisions made for even those classified as "Needing attention". This exercise will determine which banks will survive and which will be weeded out. For the former banks that will experience a shortage in capital, if they cannot raise adequate capital through their own efforts, then public funds may have to be injected provided the management responsibilities they undertake in return for this are made clear.

### **4. Two Scenarios on a Medium-term Path**

Let us examine the two scenarios and how their medium-term growth paths differ. For fiscal 2001-2003, there is not a large difference between the two paths, although pressure for structural adjustment under the Economic Revival Scenario is stronger, and the economic correction is graver. The difference is clearer in the growth pattern after fiscal 2004: for the Economic Revival Scenario we can hope to a return to a growth path of about 2%, while for the Gradual Reform Scenario, growth will be confined to about 1%.

We divide the forecast into three periods to examine the results: (Figure 4-1).

#### **[Gradual Reform Scenario]**

Fiscal years 2001-2003: due in part to the serious effects of the US recession, after marking negative growth in fiscal 2001 and 2002, growth in fiscal 2003 will be positive, but limited at just under 1%.

Fiscal years 2004-2006: the economy is unable to free itself from the burden of structural problems and the economy will be in a weak recovery stage of about 1% growth.

Fiscal years 2007-2010: Growth will be cyclical, hovering around the potential growth rate of just under 1%.

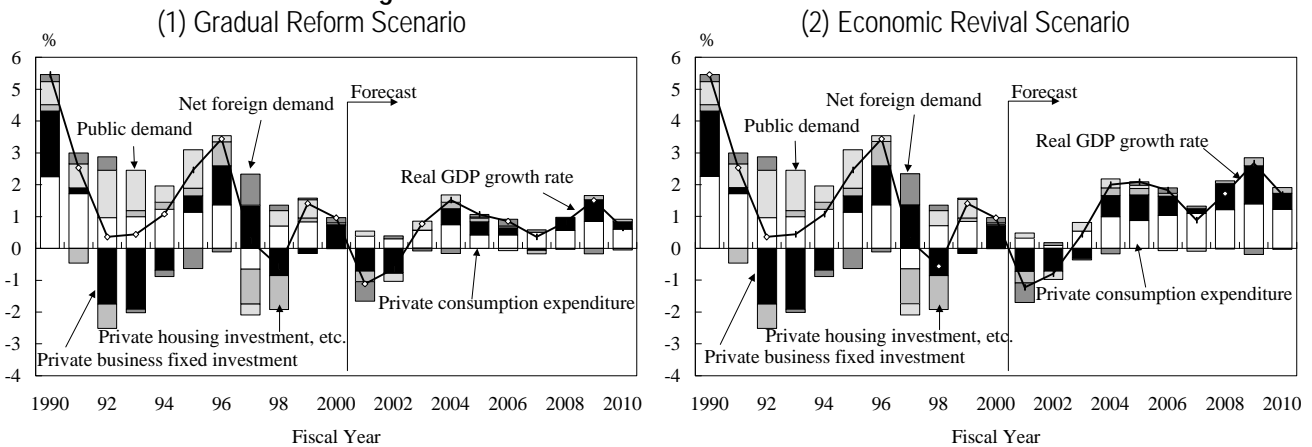
#### **[Economic Revival Scenario]**

Fiscal years 2001-2003: there will be two years of economic contraction due to the effects of the US recession. Fiscal 2003 will also mark low growth from the adjustment pressures of the structural reform.

Fiscal years 2004-2006: progress will be made in structural reforms and the economy will be free from some of its shackles. The economy will grow at about 2% (a rate above its potential), and the GDP gap will be eliminated.

Fiscal years 2007-2010: this will be a period when the structural reforms are being completed. The potential rate of growth will have risen to over 1.5% and economic growth will follow a cyclical pattern at around its potential rate.

**Figure 4-1. Contribution to Real Economic Growth**



[Notes] 1. Net foreign demand = Exports of goods and services - Imports of goods and services

2. Public demand = Government final consumption + Public fixed capital formation + Public inventory investment

[Source] Cabinet Office, "Annual Report on National Accounts"

#### 4-1. Management Improvement Imperative in Corporate Sector

##### [Gradual Reform Scenario]

The Return on Assets (ROA, defined here the sum of operating income and non-operating income then divided by total capital) will improve gradually from fiscal 2003, but will stagnate in the second half of the forecast period. The turnover of total capital will also continue to decline (Figure 4-2-(1)).

##### [Economic Revival Scenario]

The ROA will begin to recover from fiscal 2004, and will gradually increase over the remainder of the forecast period. The ROA for fiscal 2010 will be about 5.1% and will improve to levels marked in fiscal 1992 and 93. The turnover of total capital that had been falling until then will, in the second half of the forecast period, halt its decline (Figure 4-2-(2)).

#### 4-2. Fixed Business Investment to Follow a New Cycle

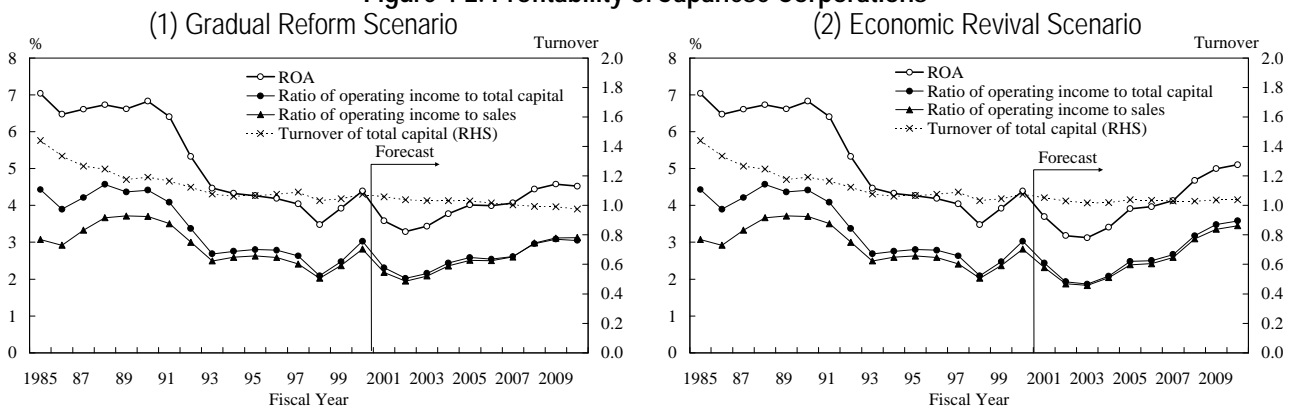
##### [Gradual Reform Scenario]

Business Fixed Investment, after declining for the two consecutive years of fiscal 2001 and 2002 due to the worldwide slump in the IT industry, will be flat in fiscal 2003. It will not be until fiscal 2004 and beyond that investment will begin to grow again, but this will be a recovery lacking in vigor as the expected growth rates of the corporate sector will increase only marginally. The prolonged disposal of bad loans, and the delay in financial institutions resuming their roles as financial intermediaries will be factors in restraining the investment of the non-manufacturing sector. If we look at the investment cycle diagram, it shows two small investment cycles around fiscal 2010 at the expected growth rate of 1-1.5% line (Figure 4-3-(1)).

**[Economic Revival Scenario]**

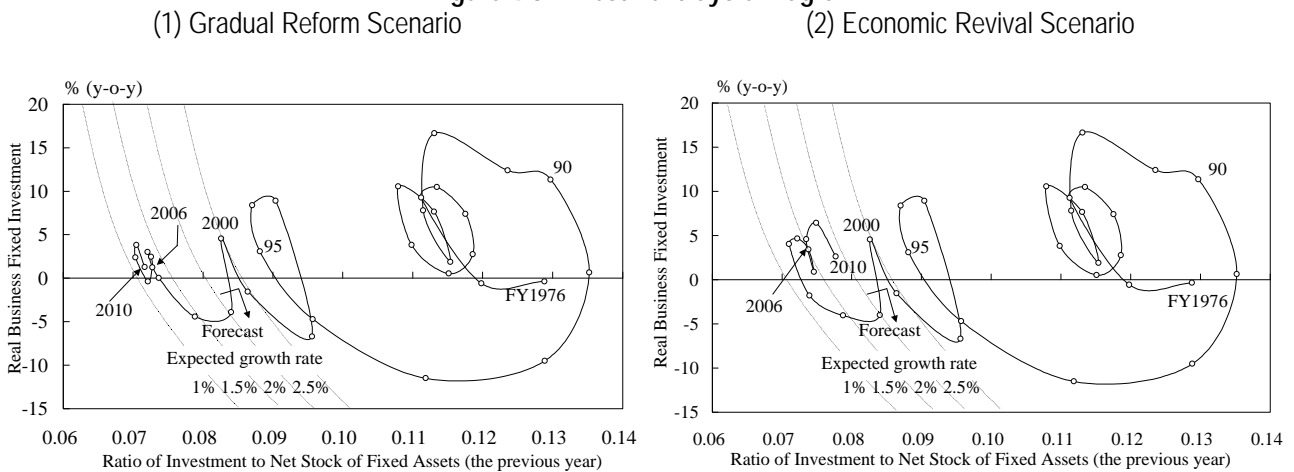
The economic reforms imposed in this scenario will lead to strong adjustment pressures and to a delayed recovery in corporate profits. Thus, business fixed investment in this case will fall for three consecutive years until fiscal 2003. However, this thorough reform will lead to the lifting of the heavy burdens on economic growth, and the uncertainty about the future will be pretty much swept away. Therefore, the recovery in fiscal years beyond 2004 will be a stronger one. The expected growth rates of corporates will increase, and the non-manufacturing sector will also enjoy a full-fledged recovery as financial institutions resume their roles as financial intermediaries and these factors will contribute to the expansion in investment. The investment cycle diagram in this scenario has the expected growth rate around the 1.5% line in fiscal 2010 and will show a larger cycle than in the "Gradual Reform Scenario" (Figure 4-3-(2)).

**Figure 4-2. Profitability of Japanese Corporations**



[Notes] Corporations with capital of 10 million yen or over  
 [Source] Ministry of Finance "Financial Statements Statistics of Corporations by Industry, Annually"

**Figure 4-3. Investment Cycle Diagram**



[Sources] Cabinet Office "Annual Report on National Accounts", Japan Center for Economic Research "JCER net stock"

### 4-3. Improved Consumer Confidence Needed to Boost Household Spending [Gradual Reform Scenario]

The disposable income of the households will increase only marginally by annual average of 0.7% between fiscal 2001 and 2006, because the restructuring efforts of the corporations will lead to stagnant employee compensations. However, for fiscal 2007-2010, wages will increase by up to 1.3%. The propensity to consume will fall until fiscal 2003 due to aggravated employment conditions. Subsequent to this, the propensity to consume will increase somewhat from an improvement in these conditions. However, anxiety about the future will remain in the household, and with the effects of the consumption tax hikes from fiscal 2005, the propensity to consume will stay at around the 91% level in fiscal 2010 (Figure 4-4). Real private final consumption will increase at a lackluster annual average of 0.8% during fiscal 2001-2006, and during fiscal 2007-2010, will grow at only a slightly higher rate of 1.1%.

### [Economic Revival Scenario]

In this scenario, household disposable income will grow an average 0.9% in fiscal years 2001-2006. In fiscal 2007-2010, it will grow at a more rapid rate of 1.8%. There will be an increase in employment mainly in the service sector, and the rate of growth of employee compensation will be higher. The propensity to consume will be lower than in the "Gradual Reform Scenario" until fiscal 2003, but will begin to grow after fiscal 2004 when the benefits of the structural reform will be more apparent and will be about 93.1% in fiscal 2010 (Figure 4-4). In the latter half of the forecast period, the employment situation will have improved significantly, and progress will be made in reforming the fiscal structure and social security system, and these will be factors in increasing the propensity to consume (Figure 4-5). Real private final consumption will grow an average 1.1% in fiscal 2001-2006, but this rate will grow to 2.2% in fiscal 2007-2010.

Figure 4-4. Change in Propensity to Consume

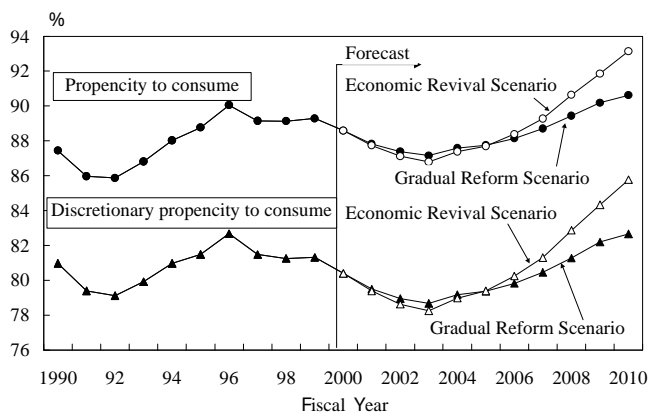
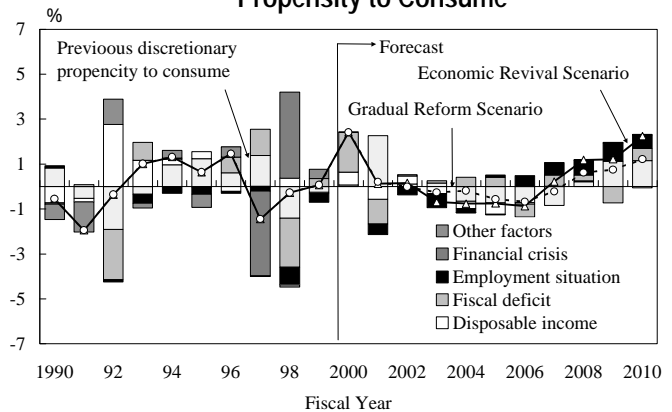


Figure 4-5. Contribution to Discretionary Propensity to Consume



[Notes] Method estimating contribution to discretionary propensity to consume (Economic Revival Scenario) is as follows.

$$D = 8.0311 + 0.9579 (PD) - 0.5316 (I) + 0.5251 (F) - 0.7956 (E) - 3.1214 (FC)$$

( 1.07 ) ( 9.72 ) ( -4.25 ) ( 2.87 ) ( -2.36 ) ( -3.59 )

D: Discretionary propensity to consume, PD: Previous discretionary propensity to consume, I: Disposable income (year-on-year)

F: Saving-Investment balance in general government to nominal GDP ( Difference from the previous fiscal year)

E: Unemployment rate FC: Financial risk dummy

Sample: FY 1981-1999 ( ): t-statistic Adjusted R-squared: 0.8844 Durbin-Watson stat: 2.2887

[Source] Cabinet Office "Annual Report on National Accounts"

#### **4-4. Division of Labor with Asia to Alter External Balance Structure**

The ratio of overseas production is expected to grow gradually to 31.4% by fiscal 2010 (Figure 4-6). Let us forecast the external balance under this assumption.

##### **[Gradual Reform Scenario]**

The surplus in the current account will decline gradually despite a growth in the surplus in the income account, and will amount to about a 1.2% share of nominal GDP by fiscal 2010, about half of the actual share in fiscal 2000, 2.4%. The surplus in the nominal goods and services balance (net exports) on an SNA (System of National Accounts) basis will drop greatly from about fiscal 2004, and by fiscal 2010, it will mark a slight deficit (Figure 4-7).

##### **[Economic Revival Scenario]**

In this scenario, both imports and exports will grow more quickly than in the "Gradual Reform Scenario" from fiscal 2004 due to the more lively economy as a result of progress made in structural reforms. There will not be a great difference in the trade surplus figures from the other scenario (income account will also mark similar surpluses). However, the service balance will have larger deficits due to the expanding foreign travel deficit, as wages begin to increase and employees will be traveling more. As a result, the current account surplus will shrink at a slightly higher pace than in the "Gradual Reform Scenario" and will have a 1.1% share of nominal GDP in fiscal 2010.

### **5. The Japanese Economy from a Macro-balance Perspective**

#### **5-1. Private Net Savings to Begin to Shrink**

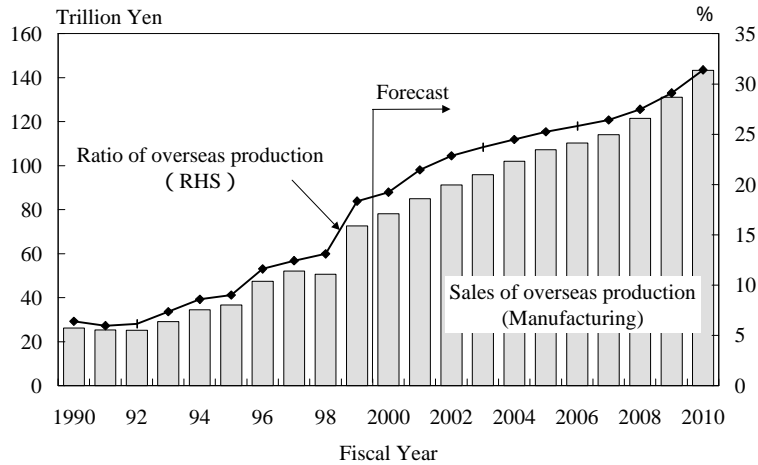
##### **[Gradual Reform Scenario]**

The net savings in the household sector will grow to between 7 and 8% as a share of nominal GNI (Gross National Income) by fiscal 2006, and then will begin to decline but will stabilize at a high rate of around 5.5% in fiscal 2010. In the corporate sector net savings will continue at between 2 and 3% until fiscal 2004, reflecting the slump in investment. Then, it will begin to shrink as investment recovers, but it will not be until fiscal 2009 that there will be net investment. The reduction in the net savings of the private sector will be absorbed by the contraction of the net investment of the government sector, as well as the reduction of net payments of the external sector. The net investment of the government will remain at a high level of 4.5% of nominal GNI in fiscal 2010 (Figure 5-1-(1)).

##### **[Economic Revival Scenario]**

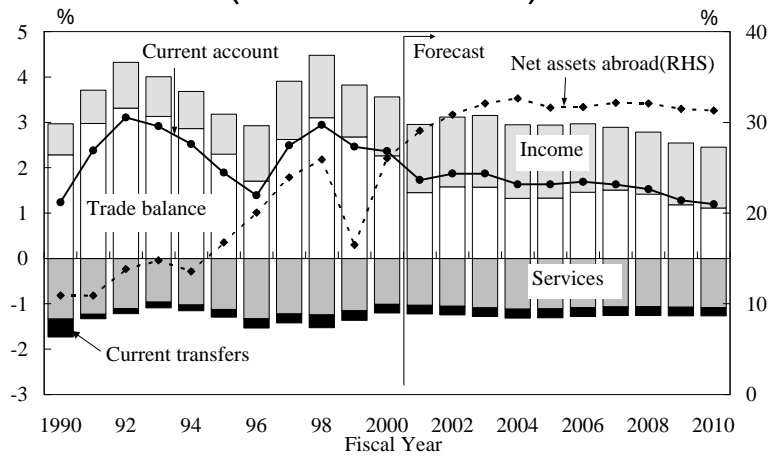
This scenario will have similar net savings as the previous scenario for fiscal years 2001-2003. Beyond fiscal 2004, however, as the structural reforms progress and the economy is revitalized, the net savings of the household sector will be reduced at a quicker rate than the earlier scenario. Moreover, the corporate sector will show a net investment from fiscal 2006 thanks to an increase in investment. The net investment of the government sector will be about 1.4% of nominal GNI in fiscal 2010, and will be very close to balanced (Figure 5-1-(2)).

Figure 4-6. Ratio of Overseas Production (Manufacturing)



[Source] Ministry of Economy, Trade and Industry " Survey of Overseas Business Activities "

Figure 4-7. Ratio of Current Account to Nominal GDP (Gradual Reform Scenario)

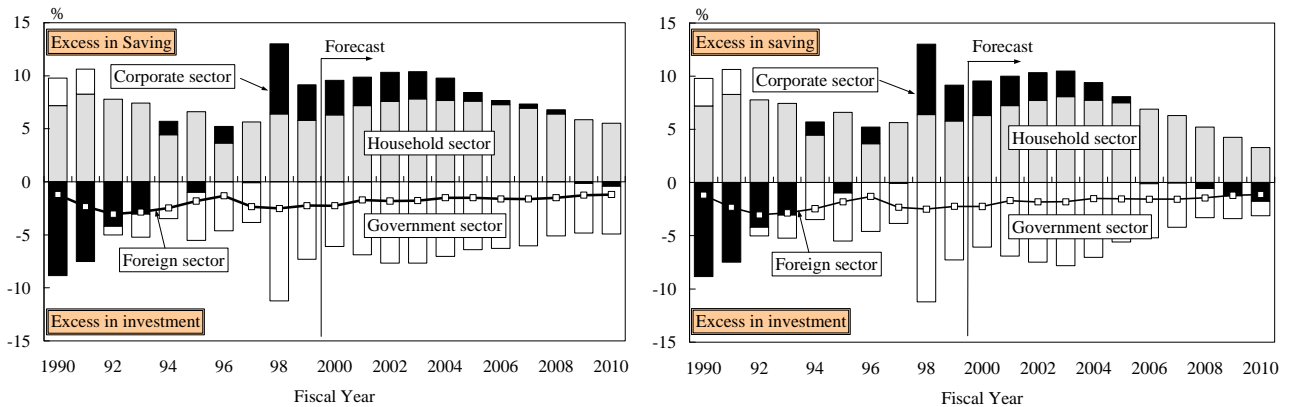


[Sources] Bank of Japan "Balance of Payments Monthly", Cabinet Office "Annual Report on National Accounts"

Figure 5-1. Saving-Investment Balance by Sector ( to Nominal GNI )

(1) Gradual Reform Scenario

(2) Economic Revival Scenario



[Source] Cabinet Office "Annual Report on National Accounts"

## **5-2. Price Conditions – Some Time Before Deflationary Pressures are Eased**

### **[Gradual Reform Scenario]**

The consumer price index (CPI, total, excluding fresh food items) will fall in fiscal 2001 by 0.9% and in fiscal 2003 will fall further by 1.2%. From fiscal 2004, the decline in prices will be smaller and beyond fiscal 2005 prices will increase by a steady rate of under 1% year-on-year due in part to the effects of a hike in the consumption tax rate (Figure 5-2-(1)).

### **[Economic Revival Scenario]**

There will not be a great difference with the earlier scenario in price trends until fiscal 2005. The difference will be seen after fiscal 2006, when the CPI will increase at a rate about 0.1-0.2% higher than the "Gradual Reform Scenario" thanks to a higher growth in personal consumption and nominal wages (Figure 5-2-(2)).

## **5-3. Further Mobility in the Labor Market**

### **[Gradual Reform Scenario]**

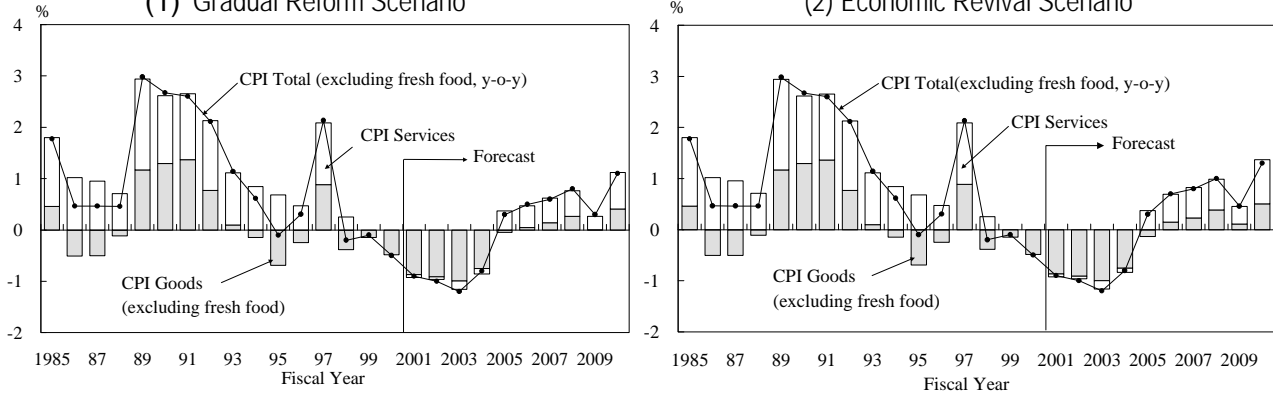
The labor participation rate will fall gradually from 62.5% in fiscal 2000 to 61.7% in fiscal 2010 as those over 65 years old will account for a larger share of the population. The participation of women in the labor force will grow slightly towards the latter half of the forecast period because of the effects of the government's efforts to lower to zero the number of waitlisted children for childcare facilities, but this is more due to the decline in men's participation. For Japan, an M-shaped curve is created when plotting labor participation rates against the ages of women due to their withdrawal from the labor force during their child rearing years (ages 30-34 in particular). This curve will shift somewhat upwards towards fiscal 2010 (Figure 5-3-(1)). The unemployment rate will peak at 6.1% in fiscal 2004-2005, and will fall from then, but the mismatch in employment will only gradually be alleviated (Figure 5-4). Since structural unemployment will fall only marginally, the rate in fiscal 2010 will be 4.1% and persist at a high level.

### **[Economic Revival Scenario]**

The labor participation rate will increase moderately in the latter half of the forecast period and in fiscal 2010 will be 63.8% and 1.3 percentage points higher than in fiscal 2000. Although the male labor participation rate will be on the decline, this will be achievable due to the synergy effects of the zero waitlist efforts of the government for childcare facilities, the elimination of the special tax deduction for spouses and the review of the national pension plan system that exempts a dependent spouse from paying pension premium, resulting in an increase in the female labor participation rate by fiscal 2010 of 4 percentage points to 53.7% over fiscal 2000. The shape of the female labor participation rate plotted against age in fiscal 2010, will resemble more closely the potential working rate curve and those curves of major countries in Europe or North America (Figure 5-3).

The unemployment rate will increase to 6.4% in fiscal 2004 and will decline from there down to 3.1% in fiscal 2010, to about the same level as the mid 1990s. This will be the result of a comprehensive reform in the labor market leading to an alleviation in employment mismatch, and structural unemployment will also fall steadily (Figure 5-4).

**Figure 5-2. Contribution to Consumer Price Index ( Total excluding fresh food )**  
 (1) Gradual Reform Scenario (2) Economic Revival Scenario

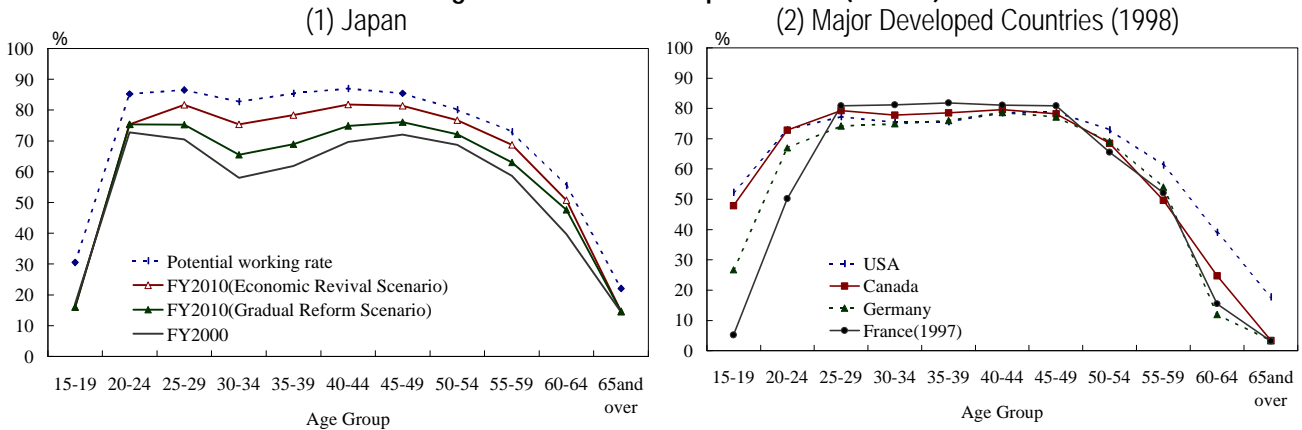


[Notes] 1.CPI : Consumer Price Index.

2.The figures after FY 2005 include influence of the hike in the consumption tax rate.

[Source] Ministry of Public Management "Annual Report on The Consumer Price Index"

**Figure 5-3. Labor Participation Rate (Female)**

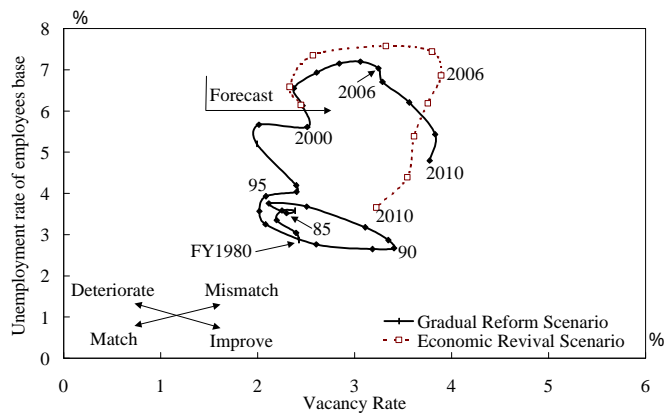


[Notes] 1. Labor participation rate = Labor force / Population 15 years old & over

2. Potential working rate (1997) = (Working persons + Persons out of work and wishing to work) / (Population 15 years old & over)

[Sources] Ministry of Public Management "Labor Force Survey", Management and Coordination Agency "1997 Employment Status Survey", International Labor Office "Yearbook of Labor Statistics"

**Figure 5-4. Unemployment-Vacancy Curve**



[Notes] 1. Unemployment rate of employees base = Unemployed / (Employees + Unemployed) × 100

2. Vacancy rate = (Active openings – Placement) / (Active openings – Placement + Employees) × 100

3. Estimation of Unemployment-Vacancy curve:  $\ln(\text{Unemployment rate of employees base } (u)) = \alpha + \beta \times \ln(\text{Vacancy rate } (v))$

[Sources] Ministry of Public Management "Labor Force Survey", Ministry of Health, Labour and Welfare "Report on Employment Service"



## 6. The Long-term Path to Fiscal Structural Reform

### 6-1. Fiscal Structural Reform Can Wait No Longer

In fiscal 2001, the deficit in the central and local government budgets totaled 7.5% of nominal GDP, and the long-term debt of the government will be as high as 133% of nominal GDP. If the government can begin to reduce this share of government long-term debt, then fiscal stability can be achieved. The problem is that under current conditions, Japan is far from meeting such conditions.

If nominal long-term interest rate continue to be higher than nominal GDP growth rate as they have been until now, then the primary balance should be running a surplus (the primary surplus for fiscal 2001 needs to be 4.5% of nominal GDP). However in fiscal 2001, the primary balance is running a large deficit of 5% of nominal GDP. The "necessary fiscal rebuilding size" defined as the difference between the necessary primary balance and the actual primary balance, is 9.3% of GDP for fiscal 2001. If we take into consideration the fact that nominal long-term interest rate is expected to be greater than nominal GDP growth rate for the time being, then we would conclude that Japan's finances are unsustainable.

Japan's budget deficit is due in large part to structural factors. In Figure 6-1, we show the factor breakdown of the central and local government based fiscal deficit. According to this analysis, over 90% of the budget deficit of fiscal 2001 (that amounted to 7.5% of nominal GDP) was due to structural deficits. The deficit due to cyclical factors was less than 10%. Moreover, if we separate the structural deficit into interest payments (paying for past debts) and structural primary balance, we see that the latter is much greater than the former. In this way, the structural primary deficit is large for the following two reasons 1) the basis for Japan's tax revenue is weakened (Figure 6-2) and 2) there continues to be upward pressure on expenditures (Figure 6-3).

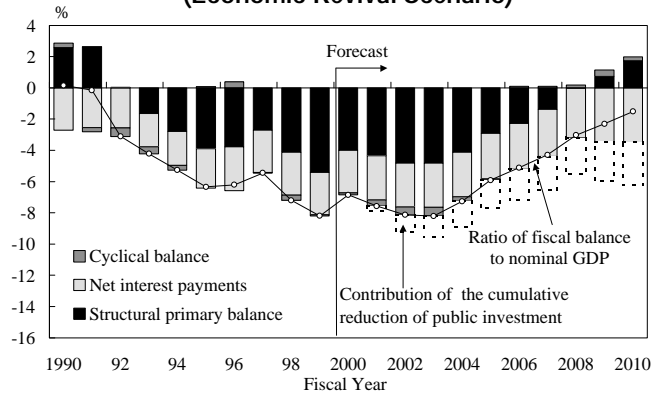
### 6-2. Two Scenarios for Fiscal Structural Reform

#### [Gradual Reform Scenario]

Due to the economic standstill that will continue in the first half of the forecast period, the fiscal deficit will balloon and in fiscal 2002 it will peak -- 40.8 trillion yen or 8.3% of the nominal GDP (in fiscal 2001, it was 7.5%). This expansion in the fiscal deficit is due in large part to the increase in the business cycle deficit, and so we can expect the built-in-stabilizer of the economy to function. Beyond fiscal 2003, the fiscal deficit should begin to shrink as a result of the increase in tax revenues as the economy begins to recover, but the speed at which this will progress will be slow, and even in fiscal 2010, a fiscal deficit of 21.8 trillion yen (or a 4.0% share of nominal GDP) will remain. The primary balance deficit -- defined as the fiscal deficit less the net interest payments -- will also begin to shrink from about fiscal 2003, but by fiscal 2010, it will be all it can do to equilibrate.

For these reasons, government long-term debt as a share of nominal GDP will continue to increase throughout the forecast period, and in fiscal 2010 will reach crisis levels of 177.5% (See Figure 6-4).

Figure 6-1. Structural and Cyclical Balances of Central and Local Governments  
 (Economic Revival Scenario)



[Notes] 1. Structural balance = Fiscal balance - Cyclical balance, Structural primary balance = Structural balance + Net interest payments  
 2. Figure in FY 1998 excludes the cumulative debt of Japan National Railways Settlement Corporation and special account for National Forest Service, transferred to the general government account.  
 [Source] Cabinet Office "Annual Report on National Accounts"

Figure 6-2. Change in National Tax Revenue  
 (Gradual Reform Scenario)

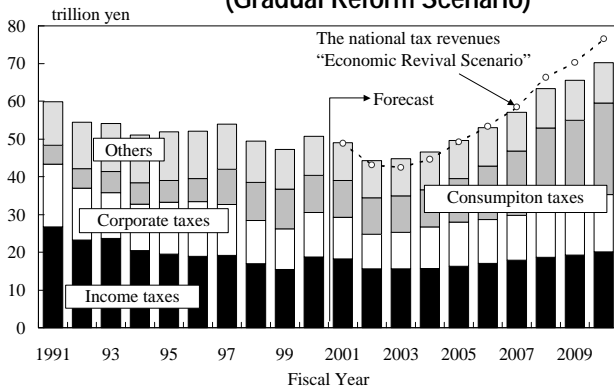
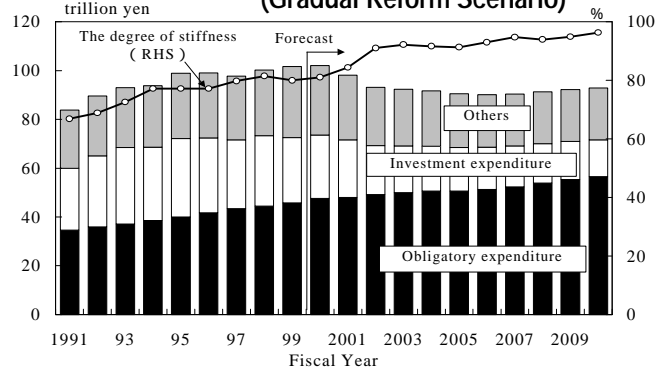
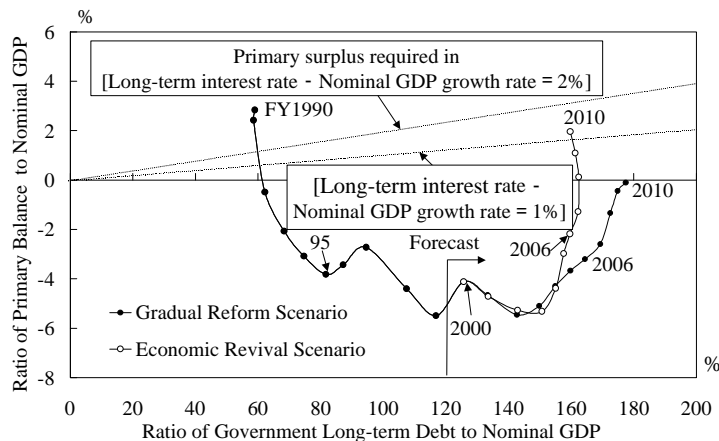


Figure 6-3. Local Public Finance  
 (Gradual Reform Scenario)



[Note] 1. The national tax revenues are equivalent to the tax and stamp revenue in annual revenue of general account, and exclude tax revenue of special account.  
 2. The degree of stiffness = Obligatory expenditure / General source of revenue × 100  
 [Sources] Ministry of Finance "Ministry of Finance Statistics Monthly", Ministry of Public Management, Home Affairs, Post and Telecommunications "White Paper on the Local Public Finance "

Figure 6-4. Path to Fiscal Rebuilding



[Note] Figure in FY 1998 excludes the cumulative debt of Japan National Railways Settlement Corporation and special account for National Forest Service, transferred to the general government account.  
 [Source] Cabinet Office "Annual Report on National Accounts"

### **[Economic Revival Scenario]**

Reflecting the economic standstill of fiscal 2001-2003, the fiscal deficit will expand until fiscal 2003 to reach 40 trillion yen, or 8.2% of nominal GDP. Beyond fiscal 2004 there will be a more robust economic recovery of about 2%. The fiscal deficit will gradually contract and by fiscal 2010, it will be 8.6 trillion yen or a 1.5% share of nominal GDP. After growing until fiscal 2003, the deficit in the primary balance will begin to shrink, and by fiscal 2008, it will be in surplus territory. In fiscal 2010, the primary balance will be in a surplus of about 2% of nominal GDP.

The government long-term debt as a share of nominal GDP will reach its peak of about 162.2% in fiscal 2007 and 2008, after which it will begin to decline to about 159.1% of nominal GDP in fiscal 2010 (Figure 6-4). Comparing the two scenarios shows clearly that in order to succeed in a fiscal structural reform, there will have to be full-fledged economic structural reforms that we describe in the "Economic Revival Scenario" so that a revitalization of the economy can be achieved.

### **6-3. "Do-Nothing" Scenario**

Finally, we conduct a simulation of the economy using the medium-term economic model assuming a "Do Nothing" Scenario where the fiscal structural reform is abandoned beyond fiscal 2003 (Table 6-1). According to this, the fiscal deficit does not shrink beyond fiscal year 2005 and the government long-term debt as a share of GDP increases at a rapid pace. The long-term interest rates go up, and prices spiral downward through shrinking investment and personal consumption. The real GDP also contracts. The government long-term debt in fiscal 2010 breaks through 200% of nominal GDP, as debt grows at an explosive rate.

### **6-4. Fundamental Reforms Needed in Social Security System**

#### **[Gradual Reform Scenario]**

If we assume that the social security system remains unchanged from its current form, then in fiscal 2003, the saving-investment gap of the social security fund will mark a deficit. In the "Gradual Reform Scenario" where a reform in the healthcare system is incorporated in fiscal 2002, the balance will temporarily improve, but it will mark a deficit in fiscal 2006 (Figure 6-5). Again, without a fundamental reform in the social security system, it will be extremely difficult to prevent a serious aggravation in the balance in the social security fund.

#### **[Economic Revival Scenario]**

In the "Economic Revival Scenario" where the blueprints for a fundamental reform in health insurance and public pension systems are put forth by fiscal 2003, we assume that a further reform in the health insurance system is carried out again in fiscal 2007. Specifically, healthcare services will be standardized, and the payment system will be shifted from the fee-for-services system to the prospective payment system, and national healthcare expenses will be lower by about 10% in fiscal 2007-2010 compared to if there is no reform. As a result, the investment-saving gap in the social security fund will maintain a positive balance throughout the forecast period with the exception of fiscal 2006 (Figure 6-5).

Table 6-1. The Effects of Fiscal Rebuilding

Indicator	Unit	FY2005	2006	2007	2008	2009	2010
Nominal GDP	%	-1.34	-1.99	-2.57	-3.03	-2.79	-2.84
Real GDP	%	-0.79	-0.91	-0.88	-0.73	-0.37	0.03
Real Private Consumption	%	-0.49	-0.74	-0.97	-1.13	-1.34	-1.17
Real Private Housing Investment	%	-2.92	-4.43	-6.19	-8.27	-10.72	-13.72
Real Business Fixed Investment	%	-5.61	-7.21	-8.29	-8.79	-8.41	-7.92
NIKKEI Stocks Average	%	-10.07	-13.23	-15.33	-16.40	-16.44	-15.60
Interest Payment	%	3.85	5.20	6.53	7.45	8.40	9.44
Saving-Investment Balance in Central and Local Governments *	Billion Yen	-1650.30	-1939.42	-2157.54	-2357.96	-2580.53	-2789.24
Primary Balance of Central and Local Government *	Billion Yen	-1016.06	-1043.84	-971.86	-928.65	-892.70	-824.12
Ratio of Long-term Debt to Nominal GDP *	% point	3.68	5.97	8.56	11.34	13.18	15.97
Ratio of Necessary Fiscal Rebuilding Size to Nominal GDP *	% point	1.95	2.28	2.60	2.77	1.84	2.79

[Notes] 1. Necessary fiscal rebuilding size = (Necessary primary balance without increase in long-term debt) - Actual primary balance

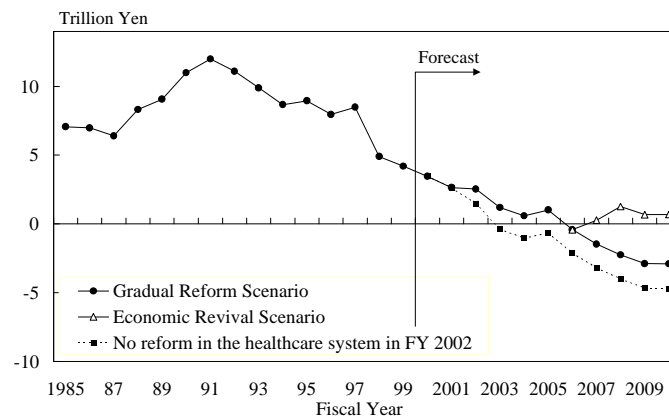
2. The figures show the difference from standard solution on the basis of the exogenous variables assumed in the "Gradual Reform Scenario"

Ratio of error = ( Solution of the simulation - Standard solution ) / Standard solution

\*Difference of error = Solution of the simulation - Standard solution

[Source] Cabinet Office "Annual Report on National Accounts"

Figure 6-5. Saving-Investment Balance in Social Security Fund



[Source] Cabinet Office "Annual Report on National Accounts"

As for the public pension system, to avoid an excessive burden on the working force, and to maintain the system on a stable path for the long-term, we assume that a vision for system reform is put forth by fiscal 2003 that states that "basic pensions will maintain the pay-as-you-go system as is currently practiced, while, the portion proportionate to compensation will be transferred to the funded system". Specifically, at the year 2010, those under 20 will be participants to the new system, and those over 20 will be participants to the old system. Since we make the assumption that the costs associated with the shift to the funded system will be dealt with after fiscal 2010 when the fiscal structural reform will almost complete, it will not affect the balance of the social security fund during the forecast period. If this reform measure is implemented after fiscal 2010, then a large deficit in the investment-saving balance of the social security fund can be avoided and long-term stability can be assured.

## Appendix: Simulation of the Medium-term Macro Model Regarding the Risk Scenarios

The "Gradual Reform Scenario" lies side-by-side with many downside risks. These are the results of the simulation of these risk scenarios using the medium-term macro-economic model (See Table A).

**Table A. The Simulation of Risk Scenarios**

**(1) 5% Decline in World Import ( FY 2002-2003 )**

( % )

Indicator	First Year	Second Year	Third Year
Nominal GDP	-0.46	-0.72	-0.52
GDP Deflator	0.00	-0.01	-0.01
Real GDP	-0.46	-0.72	-0.50
Real Private Consumption Expenditure	-0.12	-0.35	-0.54
Real Private Housing Investment	-0.08	-1.31	-2.19
Real Business Fixed Investment	-0.64	-1.48	-1.72
Real Private Inventory Investment	1.13	2.68	3.14
Real Exports of Goods and Services	-3.31	-3.30	0.01
Real Imports of Goods and Services	-1.00	-1.56	-1.08

**(2) 1% Rise in Long Yield ( FY 2003-2010 )**

( % )

Indicator	First Year	Second Year	Third Year
Nominal GDP	-0.47	-1.12	-1.69
GDP Deflator	-0.04	-0.14	-0.25
Real GDP	-0.43	-0.97	-1.45
Real Private Consumption Expenditure	-0.06	-0.33	-0.88
Real Private Housing Investment	-0.89	-2.03	-3.76
Real Business Fixed Investment	-1.59	-3.51	-5.35

**(3) 1% Rise in Long Yield and 20% Decline in Stock Prices ( FY 2003-2005 )**

( % )

Indicator	First Year	Second Year	Third Year
Nominal GDP	-1.24	-2.22	-3.14
GDP Deflator	-0.04	-0.17	-0.33
Real GDP	-1.20	-2.05	-2.83
Real Private Consumption Expenditure	-1.40	-1.98	-2.86
Real Private Housing Investment	-1.40	-4.50	-7.57
Real Business Fixed Investment	-2.52	-5.44	-8.35
Real Exports of Goods and Services	-1.02	-2.15	-2.33
Real Imports of Goods and Services	-1.89	-2.96	-4.48

**(4) 1% Fall in Propensity to Consume and 20% Decline in Stock Prices ( FY 2003-2005 )**

( % )

Indicator	First Year	Second Year	Third Year
Nominal GDP	-1.23	-1.78	-2.39
GDP Deflator	0.01	-0.02	-0.10
Real GDP	-1.24	-1.76	-2.29
Real Private Consumption Expenditure	-2.19	-2.69	-3.28
Real Private Housing Investment	-0.59	-3.82	-6.05
Real Business Fixed Investment	-1.50	-3.20	-5.11
Real Private Inventory Investment	2.55	6.08	8.32
Real Exports of Goods and Services	-0.03	-0.12	-0.29
Real Imports of Goods and Services	-2.66	-3.70	-4.68

[Notes] The figures show the difference from "Gradual Reform Scenario".

Ratio of error = ( Solution of the simulation - Standard solution ) / Standard solution

[Source] Cabinet Office "Annual Report on National Accounts"