

---

# **Success of Government Growth Strategy Holds Key to Sustainability of Japan's Public Pension System — Implications from 2014 Actuarial Valuation Results —**

*Akiko Nomura  
Senior Analyst,  
Nomura Institute of Capital Markets Research*

---

## **I. Once-every-five-year review of public pension finances**

### **1. Review of finances similar to a health checkup**

The Abe government's "Basic Policies for Economic and Fiscal Management and Reform 2014," (Basic Policies 2014) approved by Cabinet Decision on 24 June 2014, emphasizes the importance of prioritizing and raising the efficiency of the core government expenditures, including those related to Social Security, as the government works toward Japan's economic revitalization and fiscal soundness. Social security expenditures are the single largest government expenditure in Japan, with public pensions accounting for 50% of total social security benefits. The results of the latest actuarial valuation of the finances of Japan's public pension funds were released on 3 June in "The Current Status and Outlook for Finances of the National Pension Insurance and the Employees' Pension Insurance – Results of the 2014 Actuarial Valuation".

According to the National Pension Act and Employees' Pension Insurance Act, an actuarial valuation of pension fund finances, must be conducted at least once every five years to confirm and ensure the funds' long-term sustainability. In other words, this review of pension fund finances is the public pension system's periodic health check. Specifically, the review provides the long-term outlook of pension finances and determines the beginning and ending years of the so-called "macroeconomic slide," a stabilization mechanism to curb the growth of pension benefits.

The macroeconomic slide is a mechanism for suppressing the rise in public pension benefits associated with wage and price increases. For example, if the CPI rises 2%, application of the "slide adjustment" limits the increase in pension benefits to less than 2%. The macroeconomic slide is intended to offset the impact Japan's aging population and declining birthrate. The plan is to use the slide until pension finances are balanced and can be expected to remain balanced. The introduction of the macroeconomic slide was decided by the pension system revision of 2004 as a means for curbing the excessive burden that would be placed on future working generations, whose pension premiums will be used to support benefit payments.

The macroeconomic slide is expected to be put into use from fiscal 2015<sup>1</sup>. If the slide is implemented, pension benefits will not rise as much as wages or prices, leading to a decline in the income replacement ratio, which is the ratio between the pension benefit received by the model retired-worker household and average take-home pay of the current working population<sup>2</sup>. The income replacement ratio was 59% at the time of the 2004 public pension revision, but it is expected to gradually decline. However, if the ratio becomes too low, pensions will lose their significance. Therefore, the plan is to use continued slide adjustments to ensure that the replacement ratio remains above 50% when pension finances reach equilibrium. Moreover, if unforeseen circumstances result in the projected income replacement ratio falling below 50% by the time the next actuarial valuation is conducted, slide adjustments will be terminated and the system will be reviewed and revised as necessary.

For the public pension system to be declared “healthy” following an actuarial valuation, it must be determined that the income replacement ratio can be maintained at 50% or higher even after the implementation of slide adjustments. Calculations done at the time of the 2004 pension system revision estimated a final replacement ratio of 50.2%. Five years later, the 2009 actuarial valuation came up with a 50.1% figure. The results of the 2014 valuation have been anticipated with great interest about the impact of the recent global financial crisis and the Great East Japan Earthquake.

## **2. Eight scenarios presented, without specifying the main one**

However, the 2014 actuarial valuation results report released on 3 June only presents eight scenarios, based on different assumptions regarding demographic and economic conditions, for the income replacement ratio after pension finances have been balanced, without specifying which one is the main scenario. In other words, the report does not include any clear conclusion about the financial soundness of Japan’s public pension system.

---

<sup>1</sup> Although prices fell during FY2000–2002, special legislative measures kept pension benefits at their current levels. As a result, benefits have since been higher than they should be. The macroeconomic slide was to be applied after the disappearance of the excessively high pension benefits, however the excesses have yet to be eliminated and 10 years passed without implementation of the macroeconomic slide. Revisions to the National Pension Act passed in November 2012 resolved to eliminate these excessively high benefit levels during 2013–15, at last preparing an environment conducive to the implementation of the macroeconomic slide.

<sup>2</sup> It would be hard to label a public pension system as appropriate if the benefits received by retired workers are excessively large in comparison with the incomes of the current working population whose premium payments support the system. The income replacement ratio enables us to measure the equitability of the system for the working-age population and the benefits-receiving population.

**Figure 1: Eight scenarios used in the public pension system's 2014 actuarial valuation**

		Economy-related assumptions						Income replacement ratio		
Scenario	FY2014			FY2015-23			FY2024 and beyond			Income replacement ratio after reaching financial balance
	Price inflation	Wage growth	Investment return	Price inflation	Wage growth	Investment return	Price inflation	Wage growth	Investment return	
A	2.6%	1.0%	1.3%	2.0~ 2.7%	2.5~ 4.2%	1.9~ 4.9%	2.0%	4.3%	5.4%	50.9% (FY 2044-)
B							1.8%	3.9%	5.1%	50.9% (FY 2043-)
C							1.6%	3.4%	4.8%	51.0% (FY 2043-)
D							1.4%	3.0%	4.5%	50.8% (FY 2043-)
E							1.2%	2.5%	4.2%	50.6% (FY 2043-)
F	2.6%	1.0%	1.3%	1.2~ 2.3%	1.6~ 2.9%	1.6~ 3.4%	1.2%	2.5%	4.0%	50.0% (FY 2040) →45.7% (FY 2050-)
G							0.9%	1.9%	3.1%	50.0% (FY 2038) →42.0% (FY 2058-)
H							0.6%	1.3%	2.3%	50.0% (FY 2036) →35~37% (FY 2055-)

- Notes: 1. Wage growth and investment return values are nominal values.  
 2. Under Scenario H, the National Pension Insurance reserves will be depleted by FY2055, leading to a complete pay-as-you-go system.

Source: Nomura Institute of Capital Markets Research, based on “The Current Status and Outlook for Finances of the National Pension Insurance and the Employees’ Pension Insurance – Results of the 2014 Actuarial Valuation,” Ministry of Health, Labor and Welfare.

An overview of these eight scenarios, i.e. Scenarios A–H, is presented in figure 1<sup>3</sup>. Scenarios A–E are high-growth scenarios under which the income replacement ratio at the end of the macroeconomic slide is projected to be above 50%, which would indicate the sustainability of the current pension system. A common assumption in all five of these high-growth scenarios is that the participation rate of women and the elderly in the workforce will continue to rise. For example, these scenarios all assume that the decline in women’s participation rate caused by marriage and childbirth, the so-called “M-Curve”, will completely disappear.

In the low-growth Scenarios F–H, the income replacement ratio cannot be kept above 50%, and the pension system itself must undergo a review and revision in the future. Scenarios F–H also present final income replacement ratios in the case where the system is not revised and macroeconomic slide adjustments are continued even after the replacement ratio falls below 50%. For example, the final replacement ratio for Scenario F is estimated at 45.7% In Scenario H, it is estimated that the flexible continuation of slide adjustments will result in depletion of National Pension Insurance fund reserves by FY2055.

<sup>3</sup> For the purpose of our report, we present the results for the eight scenarios based on the estimates for eight economic indicators that are based on the median values for the death and fertility rates. The report on “Detailed Results” of the 2014 actuarial valuation, however, presents results based on both high- and low-end assumptions for those demographics.

As noted above, the report on this year's actuarial valuation results does not indicate which of these eight scenarios is the main scenario. As a result, the 2014 actuarial valuation is more difficult to grasp than the 2009 version, which estimated a final income replacement ratio of 50.1%, under a baseline scenario based on median fertility and economic growth assumptions.

The lack of a main scenario in this year's report probably raises the level of attention paid to the assumptions used in each scenario. If one takes that view, one could conclude that the current pension system will be sustainable if the government's growth strategy is successful.

### **3. Quantification of the effect of system revisions**

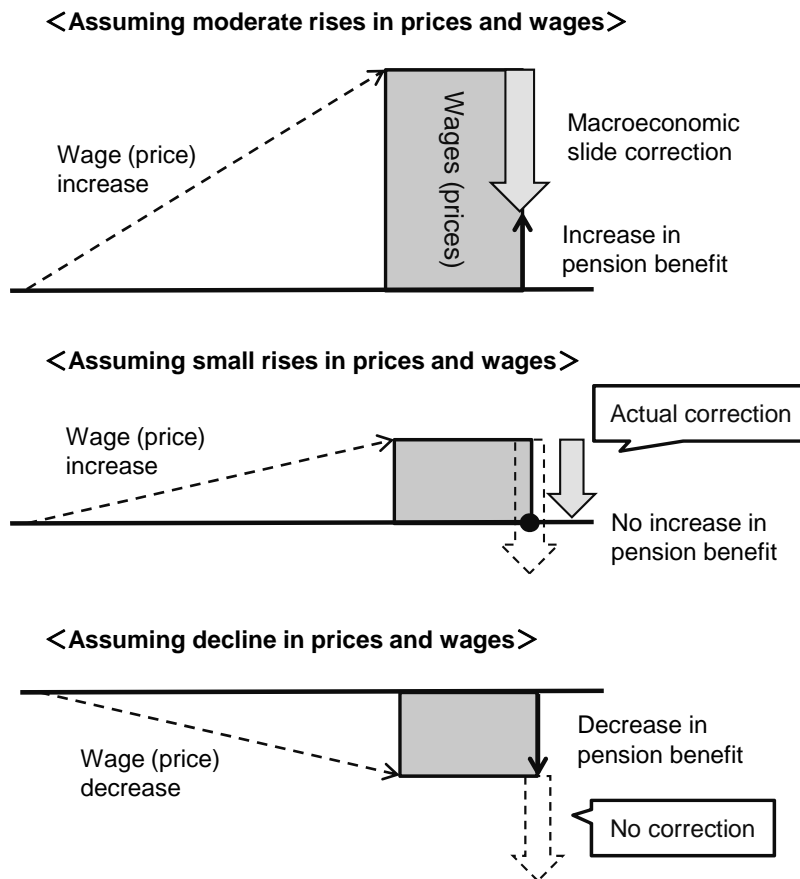
Another important part of this year's actuarial valuation is the quantitative presentation of the expected effect of measures to curb the growth in benefit payments, which to date have only been discussed theoretically. This quantification of expected effects was presented in a document entitled "Option Simulation Results," which presents the results of simulated calculations for three key options under consideration: (1) full implementation of the macroeconomic slide, (2) extension of the pension insurance premium payment period and the age at which one begins receiving pension benefits, and (3) inclusion of part-time workers in the Employees' Pension Insurance system.

#### **(1) Full implementation of the macroeconomic slide**

The macroeconomic slide has been designed in such a way that it will not fully function under a deflationary or low-growth economy. Out of consideration for the retired population, the slide seeks to avoid reductions in pension benefits as much as possible.

The slide adjustment rate is based on the trends in fertility and aging of the population. This variable therefore does not reflect economic trends. If, for example, an economic slowdown were to push price inflation below the slide adjustment rate, pension benefits should decline if the macroeconomic slide is applied mechanically. For example, at a slide adjustment rate of 0.9% and price inflation of 0.5%, pension benefits should be reduced by 0.4%. However, under the current system, pension benefits are not reduced but rather are maintained at their current level even under the circumstances just described. When prices are falling, benefits are reduced by the effect of deflation, but they are not further reduced by the slide correction. This is one reason why the suppression of pension benefits has not proceeded as planned (Figure 2).

**Figure 2: Graphic image of the macroeconomic slide**



Source: Nomura Institute of Capital Markets Research, based on Ministry of Health, Labor and Welfare materials.

**Figure 3: Summary of results of option simulations**

Scenario	Current income replacement ratio		Full implementation of macroeconomic slide	Extension of premium payment period and starting age for receiving benefits		Inclusion of part-time workers in EPI	
	No changes in economic factors	Changes in economic factors (see Note)		Pay to 65; receive from 65	Pay to 67; receive from 67	Working more than 20hrs/wk	Earning more than ¥58,000/mo
C	51.0%(FY2043- )	50.8%(FY2043- )	51.2%	57.6%	68.7%	51.5%	57.3%
E	50.6%(FY2043- )	50.2%(FY2044- )	51.0%	57.1%	68.2%	51.1%	57.5%
G	42.0%(FY2058- )	39.5%(FY2072- )	44.5%	48.4%	57.8%	42.5%	47.1%
H	35~37%(FY2055- )	35~37%(FY2051- )	41.9%	47.9%	57.2%	42.2%	45.8%

Note: Assumes  $\pm 1.2\%$  change in the economic factors (prices and wages) over a four-year cycle.

Source: Nomura Institute of Capital Markets Research, based on “The Current Status and Outlook for Finances of the National Pension Fund and the Employees’ Pension Fund – Results of the 2014 Actuarial Valuation,” Ministry of Health, Labor and Welfare.

The “Option Simulation Results” illustrates just how much the income replacement ratio would improve if this constraint were eliminated and the system were revised such that the slide correction rate was fully applied even when the rise in prices and wages is small. Taking Scenario E as an example, Figure 3 shows that the replacement

ratio would rise from 50.6% to 51.0% if the slide correction is applied<sup>4</sup>. The figure also shows that the positive impact of system revision is even greater in low-growth scenarios G and H.

## **(2) Extension of premium payment period and starting age for receiving benefits**

The world's advanced countries are moving toward raising the age when their pensioners begin receiving benefits from public pension plans to 67 or 68. For example, the starting age is now 67 in the US in Germany and 68 in the UK. Japan is implementing a gradual lifting of the starting age for receiving pension benefits from 60 to 65, and raising the starting age even higher is often mentioned as one way to curb the rise in pension benefit expenses going forward.

The simulation for this option calculates the change in the income replacement ratio under two cases. In the first case, basic pension premium payments would continue until age 65 and pension benefits would be raised by a commensurate amount<sup>5</sup>. In the second case, pension premiums would be collected until age 67, when pension benefits would begin. In the first case, pension benefits would increase to reflect the lengthening of the premium payment period. The second case has the added effect of delaying the start of pension benefits and thereby produces an even larger improvement in the income replacement ratio. In Scenario E, for example, delaying benefit payments until 67 results in a 17.6ppt improvement in the income replacement ratio from 50.6% to 68.2%. Furthermore, in Scenario G, where the actuarial valuation forecasts the income replacement ratio to fall to 42%, extending the premium payment age and postponing benefit payouts until 67 would raise the replacement ratio to 57.8% (Figure 3).

## **(3) Inclusion of part-time workers in Employees' Pension Insurance system**

The options simulation also calculates the projected impact of extending the Employees' Pension Insurance (EPI) system to part-time workers, who to date have been excluded from the system. If all Japan's 2.2 million part-time workers who work more than 20 hours a week are included in EPI, the income replacement ratio for Scenario E would rise by 0.5ppt. Furthermore, if EPI is made available to all workers

---

<sup>4</sup> The 2014 actuarial valuation does not take into account the situation where the macroeconomic slide to reflect changes in economic conditions is not fully implemented. However, Scenarios C, E, G, and H show separate values for the income replacement ratio assuming a  $\pm 1.2\%$  change in the economic factors (prices and wages) over a four-year cycle. For example, in Scenario E, the baseline income replacement ratio declines from 50.6% to 50.2% when a change in the two key economic factors is factored in. Here, system revision has a positive impact of 0.8%. See Figure 3.

<sup>5</sup> Under the current system, pension premiums are collected for a maximum period of 40 years (from ages 20 to 60). However, this option would extend the premium payment period to 45 years (from ages 20 to 65) and the basic pension benefit would rise to reflect the increase in the number of payment years only. In addition, old-age pensions for active employees past the age of 65 would be abolished.

earning more than ¥58,000 a month regardless of hours worked, the Scenario E ratio would increase by 6.9ppt.

Going forward, we think the discussions of these system revisions could include consideration of these simulation's calculations of the various options' potential quantitative impact.

## **II. GPIF investment reforms and the actuarial valuation**

### **1. GPIF under pressure to reform investment**

The economic assumptions in the actuarial valuation include the investment returns on public pension reserve funds. Japan's public pension system has accumulated reserves totaling ¥126.6 trillion (as of end-March 2014). The investment yield generated by those funds has a major impact on pension finances.

Pension fund reserves are managed by the Government Pension Investment Fund (GPIF), an independent administrative institution. According to its foundation law, the GPIF must conduct stable and effective investments from a long-term perspective. In line with that basic philosophy, the GPIF establishes its basic portfolio with assets allocated among four types of investment instruments: the domestic bonds, domestic equities, foreign bonds, and foreign equities.

The appropriate investment of public pension reserves is essential to the effective use of valuable asset of Japanese people. As such, the GPIF's investment strategies and policies have repeatedly been the subject of debate. The second Abe government has emphasized the need for more effective use of domestic assets and promotion of the supply of growth funds. From that perspective, the government's basic growth strategy, released in June 2013 as the "Japan Revitalization Strategy," called for a review of the investment, governance and other issues related to public and quasi-public funds such as those managed by the GPIF. In November 2013, a government panel of experts assembled to consider these issues presented its proposals for introducing more sophisticated investment and risk management of public and quasi-public funds. The panel's report recommended revision of the GPIF's domestic bond-centric portfolio and its governance system with a view toward increasing returns on equity assets by, for example, adopting policies in line with Japan's Stewardship Code<sup>6</sup>.

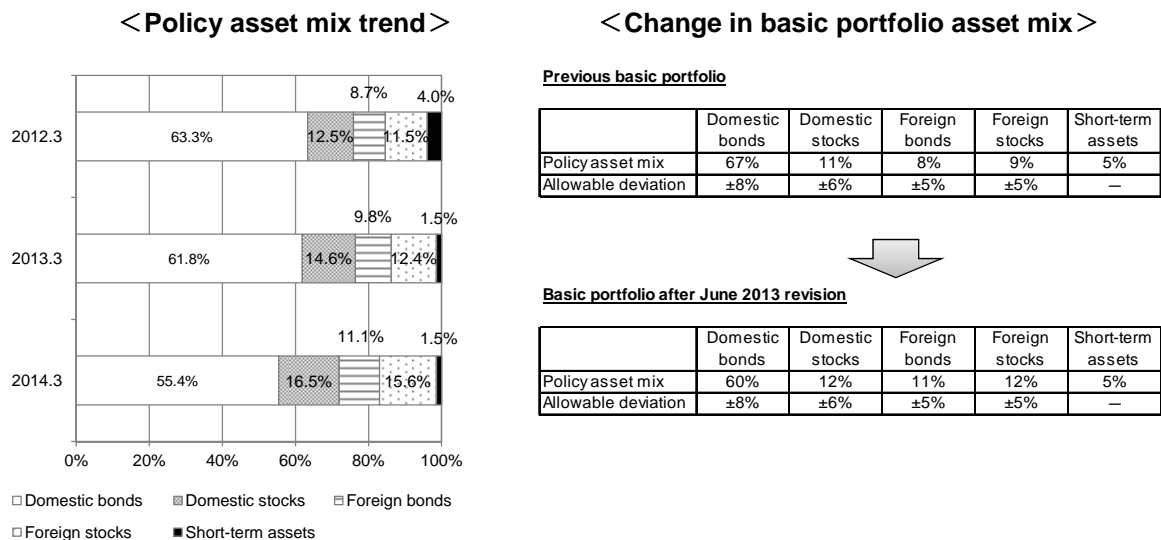
As pointed out by the panel of experts, GPIF's investments have focused on domestic bonds. However, even before the panel presented its proposals, the GPIF

---

<sup>6</sup> "Principles for Responsible Institutional Investors" is the official name of this Japanese version of UK's Stewardship Code. Published in February 2014, the code establishes the principle that it is the responsibility of institutional investors to enhance medium- to long-term investment returns for their clients and beneficiaries by promoting the sustainable growth of companies they have invested in through constructive dialogue and exchange with those companies.

had already reviewed its basic portfolio back in June 2013 and lowered its domestic bond allocation ratio from 67% to 60%. Figure 4 shows the recent trend in the GPIF's asset allocation. As shown here, the share of domestic bonds has fallen from 63% to 55% over the past two years.

**Figure 4: GPIF Asset Allocation and Basic Portfolio**



Source: Nomura Institute of Capital Market Research, based on GPIF materials

Nonetheless, the GPIF is proceeding with further review of its investments in line with the expert panel's report. In February 2014, the GPIF began investing in infrastructure under a co-investment agreement with the Ontario Municipal Employees Retirement System (OMERS) and the Development Bank of Japan (DBJ). In April of the same year, the GPIF announced the results of a review of its domestic equity investments. Specifically, the GPIF clearly indicated that it would be further diversifying its investments by (1) expanding the number of indices used to guide its passive investments in domestic stocks by adding three new indices, including the JPX-Nikkei Index 400, to the TOPIX index that has guided its passive investments to date, (2) diversifying its active investments through the use of the smart-beta active investment approach, and (3) beginning to invest in J-REITs<sup>7</sup>. Then in May it announced its acceptance of Japan's Stewardship Code, thus committing itself to the enhancement of corporate value as an institutional investor (Figure 5).

<sup>7</sup> For more on the use of the smart beta approach, see the "World's Pension Funds Adopting Smart Beta" by Kota Okada in the summer online issue of the *Nomura Capital Market Quarterly* (in Japanese).



**Figure 5: Developments leading toward more sophisticated investment by GPIF**

Date	Development
2013/11/20	Panel for Sophisticating the Management of Public/Quasi-public Funds recommends revisions to investment policies if GPIF and other government agencies.
2013/12/24	Cabinet approves "Basic Policy on Independent Administrative Institutions", which recommends the GPIF consider introducing more flexible salary and staff levels as well as fixed-term and annual-salary systems in order to attract investment professionals with highly specialized skills.
2014/2/27	Announcement of "Principles for Responsible Institutional Investors (Japan Stewardship Code)". Establishes principle that is the responsibility of institutional investors to enhance medium- to long-term investment returns by promoting higher enterprise value of companies they have invested in by engaging in constructive dialogue with those companies.
2014/2/28	GPIF announced start of infrastructure investments under a co-investment agreement with Development Bank of Japan and Ontario Municipal Employees Retirement System (Canada).
2014/3/12	Special committee of the Pension Subcommittee of the Social Security Council issues "Concerning the Economic Assumptions and Investment of Pension Fund Reserves with Regard to Pension Finances (Report on Study Results). Effective investment return on public pension fund reserves reported to be 1.7%.
2014/4/1	GPIF announces FY2014 plan. Plans to cooperate with the Federation of National Public Service Personnel Mutual Aid Associations, etc., to create model portfolio in line with actuarial valuation, etc.; formulate new basic portfolio; hire more highly specialized investment professionals.
2014/4/4	GPIF announces use of new indices for passive investments, start of investment in J-REITs, and use of the smart-beta active investment approach.
2014/5/30	GPIF announces acceptance of the Japan stewardship code.

Source: Nomura Institute of Capital Markets, based on various materials

## 2. GPIF's targeted return on investments

These developments have raised expectations that investment reforms at the GPIF will increase the supply of risk money in Japan and contribute to economic growth. However, the GPIF mission is to contribute to the stability of Japan's pension system by securing gains on the investment of pension fund reserves. The main impetus for reforming GPIF investments should be the judgment that its investment strategies would not enable it to fulfill its mission. This time, however, the discussion of reforming GPIF investments appears to have come before such a decision.

According to a report released in March 2014 by the Special Committee on Economic Assumptions and Investment of Pension Fund Reserves with Regard to Pension Finances (Special Committee on Economic Assumptions), GPIF needs to target an investment return on pension reserves that is 1.7ppt higher than the wage increase rate<sup>8</sup>. The recommended target return is 0.1ppt higher than the committee's recommendation at the time of the 2009 actuarial valuation (wage increase + 1.6ppt).

The Special Committee on Economic Assumptions also expressed its opinion that diversification of GPIF's investments should be premised on the benefits for insured

<sup>8</sup> Pension Subcommittee of the Social Security Council, Special Committee on Economic Assumptions and Investment of Pension Fund Reserves with Regard to Pension Finances, "Concerning the Economic Assumptions and Investment of Pension Fund Reserves with Regard to Pension Finances (Report on Study Results)", 12 March 2014 (in Japanese).

pensioners and preceded by a more extensive study of the issue. Although the order of discussion was backwards, it can be considered as a confirmation that the GPIF needs a more sophisticated investment policy if it is contribute to sustainable public pension finances. The “Basic Policies 2014” and the 2014 revision of “Japan Revitalization Strategy – Japan’s challenge for the future” (the updated, second version of the Abe government’s growth strategy), were both approved by Cabinet Decision on 24 June 2014. Both documents call for the GPIF to steadily and speedily implement the measures recommended by the expert panel and to conduct a review of its basic portfolio as soon as possible after receiving the results of the 2014 actuarial valuation.

The 2009 actuarial valuation expressly stated 4.1% (wage increase + 1.6ppt) as the nominal value for the GPIF's long-term return on investment. However, the 2014 valuation adopted a new policy on expressing this value, stating that a nominal value for the GPIF’s long-term investment return would not be indicated. (The investment return values shown in Figure 1 for FY2024 onwards were derived by the author by adding the price increase rate to the GPIF’s current actual return on investment.) The Special Committee on Economic Assumption’s report explains the policy change as reflecting the opinion that stating a nominal target for the investment return out of context led to a confused discussion of investment objectives at the time of the 2009 actuarial valuation<sup>9</sup>. However, we think the omission makes the actuarial valuation difficult to understand.

### **III. Expectations for defined contribution pension**

The discussion of the reform of Japan’s social security system, including public pensions, is ongoing. The main outstanding pension-related issue basically is the measures for curbing pension benefits. As noted earlier, this year’s actuarial valuation included simulations of the quantitative impact of system reforms.

Meanwhile, if the macroeconomic slide is finally implemented, public pension benefits will effectively be reduced even under the current system. The role of public pensions will inevitably be reduced, with private pension plans, including corporate pensions, taking on greater importance. The 2014 revision to the tax system raises the limit on corporate defined contribution (DC) pension plans<sup>10</sup>.

In addition, part two of the government’s growth strategy specifically mentions revisions to the pension system that will promote the widespread use of DC pension plans. As a means of boosting activity in the financial and capital markets, the updated strategy document also calls for greater circulation of Japan’s wealth of household financial assets as funds supporting economic growth. The following measures related to DC pensions are also under consideration.

---

<sup>9</sup> See Footnote 8.

<sup>10</sup> The monthly limit for corporate plans with a DC component only will be raised from ¥51,000 to ¥55,000. For plans with a defined benefit component as well as a DC component, the limit will be raised from ¥25,500 to ¥27,500.

To promote greater use of defined contribution pensions, the revised growth strategy calls for discussion of such issues as (1) improving the overall investment decision by participants in the DC pension system to promote greater participation by the Japanese people in their own retirement planning and (2) measures that will create greater inclusiveness to match various lifestyle and career choices (such as discussion on the employee contribution limit and seeking greater adoption of DC pension plans by small and midsize enterprises, These are to be discussed along with the review of the public pension system, including the workplace pension component<sup>11</sup>.

Participants in DC pension plans hold individual accounts and issue instructions on how the assets in the account are to be invested. When changing jobs, the individual's account is transferred to the DC plan administered by the new employer or to an individual DC plan. The assets continue to receive the favorable tax treatment available to pension assets. Because DC plans are designed to promote the individual's active participation in accumulating assets for retirement and are able to respond more flexibly to diversifying work-life choices, the DC system is better equipped to meet changes in economic and social conditions. Meanwhile, a look at the asset allocation of corporate DC pension plans shows that 60% of their funds are invested in low-risk, low-return savings and insurance products. It is therefore hard to say that DC participants are practicing long-term diversified investments. For DC pension plans to fulfill their intended function as a system for building an asset base to live on during one's old age, the system reforms noted above need to be carried out. Revisions to the corporate pension plan system, DC plans, are due to be discussed in the Corporate Pension Subcommittee of the Social Security Council, an organ of the Ministry of Health, Labour and Welfare.

The two government reports released in June this year—the results of the public pension actuarial valuation and the second part of the Abe government's growth strategy—both point to an inevitable reduction in the role of the public pension system in Japan as part of the process of ensuring the system's soundness. The two reports also highlight the growing importance of establishing a pension system that encourages individuals to take a more active role in asset formation in preparation for old age and retirement. We look forward to more aggressive efforts from the government to realize a public/private pension system that will enable today's working population to have a more favorable outlook for public pensions and begin preparing for old age while time is on their side.

---

<sup>11</sup> "Japan Revitalization Strategy" (2014 revision), p77–78 (in Japanese)