

# **Review of the 2004 Actuarial Valuation of the Public Pension Plans (Summary)**

## **1. Outline of public pensions, actuarial valuation, and review of actuarial valuation**

### **(1) Review of actuarial valuation**

The review described in this report is based on the 2004 actuarial valuation, and is conducted in response to the cabinet decision in 2001 to examine the stability and equitableness of the employee pension plans. It covered all public pension plans, including the National Pension (NP), with a particular focus on the employee pension plans.

## **2. Results of the 2004 actuarial valuation**

### **(1) Projected number of insured persons**

The number of insured persons will decline annually from FY2005 to FY2100. According to the results of the 2004 actuarial valuation, the number of insured persons will decline over this period from 32.3 million to 14.2 million under Employees' Pension Insurance (EPI), from 4.2 million to 1.5 million under National Public Service Personnel Mutual Aid Association (NPSP) and Local Public Service Personnel Mutual Aid Association (LPSP), and from 442,000 to 202,000 under the Mutual Aid Corporation for Private School Personnel (PSP). The number of Category-1 insured persons in NP will decline from 21.9 million to 8.9 million.

\* NPSP and LPSP integrated their future projection together, so the notation NPSP&LPSP is used hereafter.

### **(2) Projected number of beneficiaries**

The total number of beneficiaries under each plan is projected to initially increase, and then go into decline after peaking in around FY2040 (in the mid-2060s in the case of PSP).

### **(3) Projected contribution rate**

According to the results of the 2004 actuarial valuation, the final contribution rate for NPSP&LPSP and PSP will exceed 18.3% for EPI. For NPSP&LPSP, estimates were calculated assuming four different extents of reserve (extents 1 to 4), and the final contribution rate ranged from 18.8% to 19.2%. The final contribution rate for PSP will be 18.5% if raised by 0.354% each year, and 20.7% if raised by 0.231% each year. The final monthly contribution per capita for NP will be ¥16,900 (in FY2004 value).

### **3. Review regarding ensuring stability**

#### **3-1. Review perspectives**

##### (1) Review perspectives

The review regarding ensuring the stability of the pension plan was performed from two different kind of perspectives: in the case of fixed contribution program, “to ensure that there is no risk of benefit levels being lowered rapidly and/or the basic expenditure after retirement no longer supportable”; and in the case of determined benefit program\*, “to ensure that there is no risk of the contribution rate rising sharply or the cost burden becoming excessive”.

\* Such as NPSP, LPSP, PSP in which benefits are first determined in conformity with EPI benefit design, the contribution rate necessary to maintain balanced finances is then determined later.

#### **3-2. Benefit level and contribution rate**

##### (2) Benefit level

The replacement ratio of the model pension benefit of EPI is projected to gradually decline and reaches 50.2% in FY2023 onward. Judged in terms of the perspective for fixed contribution program, the stability of EPI appears to be ensured if conditions remain as assumed for the 2004 actuarial valuation.

##### (3) Demographically-modified indexation

Applying demographically-modified indexation, benefits are projected to be ultimately reduced by approximately 15%. This adjustment has a major positive effect on pension finances, so demographically-modified indexation should make a substantial contribution to the stability of pension finances.

##### (4) Contribution rate

The contribution rates for Mutual Aid pensions are projected to be raised 0.354%\* each year, and the final contribution rates will reach 18.8-19.2% for NPSP&LPSP and 18.5% for PSP. Judged in terms of the perspective for determined benefit program, the stability of Mutual Aid pensions appears to be ensured if conditions remain as assumed for the 2004 actuarial valuation.

\* Assuming the NPSP contribution rate is increased 0.129% each year until it becomes the same as that for LPSP in September 2009.

#### **3-3. Evaluation according to financial indicators**

##### (5) Pension support ratio

The pension support ratio of each plan is projected to decline gradually till around FY2050, and the decline (maturity) will be particularly sharp in PSP. Thereafter, the ratios will be flat and become 1.66 for EPI, 1.20

for NPSP&LPSP, 2.45 for PSP, and 1.4 for the Basic Pension in FY2100.

(6) Comprehensive cost ratio

The comprehensive cost ratio in FY2100 is expected to be 20.4% for the EPI, 23.6% for NPSP&LPSP, and 24.0% for PSP. The increase will be particularly rapid in PSP.

(7) Expenditure/revenue ratio

In FY2100, the expenditure/revenue ratios of EPI (106.6%) and NP (106.2%) are projected to be comparatively stable. In the case of NPSP&LPSP (120.1% in the case of extent of reserve 1) and PSP (123.9%), however, it means that around 20% of expenditures will have to be financed by using reserve.

### 3-4. Reserve level

(8) Reserve ratio

The reserve ratio in FY2005 was 6.2 for EPI and 4.6 for NP. By contrast, the ratio was considerably higher for Mutual Aid pensions: 9.6 for NPSP&LPSP (7.5 for NPSP and 10.2 for LPSP), and 10.3 for PSP. The ratios for all plans are projected to peak in around FY2030-2035, and then fall constantly to reach 1.3 for EPI, 1.4 for NPSP&LPSP (extent of reserve 1), 1.5 for PSP, and 2.3 for NP in FY2100.

(9) Effect of reserve on reduction of contribution rates

Converting investment income and reductions in reserves to contribution rate equivalents reveals relative high for all plans. If we examine the effect on the reduction of the contribution rate of reserves by comparing the comprehensive cost ratio and contribution rate, we find that, at its peak, the contribution rate is reduced by 4.5% in the case of EPI, 6.4% in the case of NPSP&LPSP, and 9.9% in the case of PSP. Regarding NP, contribution is reduced by approximately ¥4,180 (in FY2004 value) at its peak.

### 3-5. Details of financial resources and benefits of each plan

(10) Present value of benefits

The present value of the benefits is ¥1,710 trillion under EPI, ¥301.5 trillion under NPSP&LPSP, ¥26.7 trillion under PSP, and ¥280 trillion under NP. In the case of NPSP&LPSP, the present value of benefits for the past service is comparatively higher than under other plans.

(11) Present value of financial resources

The financial resources of EPI measured by present value consist of 70% contributions, 20% national subsidy, and 10% financial resources obtained from reserve. The proportion of financial resources obtained from reserves is slightly higher in the case of NPSP&LPSP (extent of reserve 1). In the case of NP, the national subsidy accounts for over 50% of financial resources.

**3-6. Effect of changes in assumptions**

(12) Changes in assumptions

The actuarial valuation assumptions were changed to reflect a number of scenarios: high fertility rate, low fertility rate, economic change 1, economic change 2, no improvement in mortality, and change in per capita contribution to Basic Pension only (Mutual Aid pensions only). Financial projections were then calculated, and comparisons made with the baseline scenario (i.e. the results of actuarial valuation).

Notes: Economic change 1: From FY2009, rate of investment return = 3.1%, wage growth rate = 1.8%, price inflation = 1.0%  
 Economic change 2: From FY2009, rate of investment return = 3.3%, wage growth rate = 2.5%, price inflation = 1.0%

(13) Effect on benefit level

The replacement ratio index (FY2004 = 100) is ultimately lower in the case of low fertility rate (78) and economic change 1 (83) than the baseline scenario (85). Conversely, the index is higher for high fertility rate (87), economic change 2 (86), and no improvement in mortality (92) than the baseline case.

Reference: Effect of changes in assumptions

	Baseline scenario	High fertility rate	Low fertility rate	Economic change 1	Economic change 2	No mortality improvement	Per capita contribution change only
Replacement ratio index (FY2004 = 100)							
	85 (2023)	87 (2020)	78 (2031)	83 (2027)	86 (2023)	92 (2014)	85 (2023)
Final contribution rate							
EPI	18.3% (2017)	18.3% (2017)	18.3% (2017)	18.3% (2017)	18.3% (2017)	18.3% (2017)	
NPSP&LPSP	18.8% (2020)	18.8% (2020)	18.8% (2020)	18.7% (2020)	19.0% (2020)	18.9% (2020)	19.0% (2020)
PSP	18.5% (2027)	18.0% (2026)	19.9% (2031)	18.3% (2027)	19.0% (2029)	17.8% (2025)	18.7% (2028)

Note: Figures in parentheses indicate the year of attainment.

(14) Effect on contribution rate

The final contribution rate for EPI is 18.3% in all cases because the rate is fixed by law.

As a result of demographically-modified indexation, the final contribution rate for NPSP&LPSP will be the same as the baseline scenario (18.8%) in the case of both high fertility rate and low fertility rate. The final contribution rate in the case of economic change 1 (18.7%) will be lower than the baseline scenario, and

economic change 2 (19.0%), no mortality improvement (18.9%), and per capita contribution change only (19.0%) will be higher than the baseline scenario.

The contribution rate for PSP will be higher in the case of low fertility rate (19.9%), economic change 2 (19.0%), and per capita contribution change only (18.7%) than the baseline scenario (18.5%), and lower in the case of high fertility rate (18.0%), economic change 1 (18.3%), and no mortality improvement (17.8%).

(See “Reference” above.)

### **3-7. Effect of pension revisions**

(15) Effect of increase in proportion of subsidies by state etc.

Raising the proportion of subsidies by the state etc. for the contribution to Basic Pension decreases the final contribution rates of employee pension plans by 3.1 points in the case of EPI, 2.6 points in the case of NPSP&LPSP, and 3.3 points in the case of PSP.

(16) Effect of introduction of fixed contribution program and automatic adjustment of indexation

A 4.5-point decline in the final contribution rate for EPI as a result of the introduction of fixed contribution program (EPI and NP) and automatic adjustment of indexation causes the benefit level to decline by a little less than 20%. As a consequence, the final contribution rate for Mutual Aid pensions falls by 6.1 points in the case of NPSP&LPSP, and by 4.0 points in the case of PSP.

(17) Effect of change from whole-future-balancing method to closed-period-balancing method

Switching to the closed-period-balancing method mitigates the decline in benefit level under employee pension plans by around 3 points. The final contribution rate is also reduced by 0.8 points in the case of NPSP&LPSP, and by 0.5 points in the case of PSP.

## **4. Review regarding ensuring equitableness**

(1) Review perspective

The review regarding ensuring inter-plan equitableness performs from the perspective of “basically ensuring that no differences arise between plans in the level of contributions for the same pension benefits, taking into account the past management of these plans and similar factors”.

In concrete terms, the benefits provided under each plan are divided into the contribution to Basic Pension (Tier 1), the EPI earnings-related portion (Tier 2), and the Mutual Aid occupational pension portion (Tier 3), and the contribution levels for Tier 1 and Tier 2 benefits, which are common to all employee pension plans, are examined.

(2) Allocation of contribution rate

As contribution rates are set as a whole, it is not really possible to break them down and allocate to specific tiers. In order to examine inter-plan equitableness, however, contribution rates based on the 2004 actuarial valuation are mechanically allocated by the following method.

Method of allocation of contribution rate

The portion of the contribution rate for the contribution to Basic Pension is first adopted as the Tier 1 portion, and the remaining contribution rate is allocated proportionately according to the benefits of the Tier 2 portion and Tier 3 portion in each fiscal year concerned.

(3) Level of contribution for Tier 2 benefit

The contribution rate for Tier 2 portion exhibits some difference in the short term. In the long term, however, this difference is projected to disappear, and levels of contributions under each plan will become approximately equal.

Reference: Contribution rate for Tier 2 portion (mechanically and rough estimates)

	FY2005	FY2050	FY2100
EPI	9.3%	12.2%	12.6%
NPSP&LPSP	10.2% (NPSP) 9.4% (LPSP)	12.3% (extent of reserve 1)	12.5% (extent of reserve 1)
PSP	6.4%	12.2%	12.4%

(4) Level of contribution for Tier 1 benefit

The contribution rate for the Tier 1 portion (rate for the contribution to Basic Pension) is lower for Mutual Aid pensions than for EPI. This difference arises because whereas the contribution to Basic Pension is contributed per capita, this fixed sum contribution is converted to a contribution rate according to total standard remuneration, which differs according to plan.

(5) Level of contribution for benefit excluding occupational pension portion

In FY2005, the contribution rate for benefit excluding occupational pension portion (combined contribution rates for Tier 1 benefit and Tier 2 benefit) is 14.3% for EPI, 13.5% for NPSP, 12.7% for LPSP, and 9.9% for PSP. In FY2100, the rate will be 18.3% for EPI, 16.5% for NPSP&LPSP (extent of reserve 1), and 16.5% for PSP. There is some difference between the employee pension plans.

Reference: Contribution rate for benefit excluding occupational pension portion  
(mechanically and rough estimates)

	FY2005	FY2050	FY2100
EPI	14.3%	18.3%	18.3%
NPSP&LPSP	13.5% (NPSP) 12.7% (LPSP)	16.5% (extent of reserve 1)	16.5% (extent of reserve 1)
PSP	9.9%	16.5%	16.5%

(6) Inter-plan equitableness

In order to eliminate the difference described in (5), it is necessary to expand the financial unit and equalize the cost burden of the common portion.

Regarding the current difference in contribution rates for benefits excluding occupational pension portion, however, careful consideration must be paid to the fact that this arises as a result of factors such as differences in the degree of maturity of each plan, and the fact that the plans are independent of each other and operated in accordance with their own separate financial programs.

In the long term, the difference between Mutual Aid pensions in the contribution rates for benefits excluding occupational pension portion will almost entirely disappear. The difference between EPI and Mutual Aid pensions, however, is forecast to remain. This difference arises as a result of the difference in the contribution rates for Tier 1 benefits, and the difference in contribution rates for Tier 2 benefits will almost entirely disappear.

It is therefore unlikely that the difference in contribution rates for benefits excluding occupational pension portion between plans will be completely eliminated unless, for example, action is taken to integrate the financial units of employee pension plans.

**5. Review of the method of future projections**

(1) Items of initial data and actuarial assumptions

Similar initial data and actuarial assumptions are used in all plans, but there are some slight differences according to plan.

(2) Compilation of initial data and data thereof

The initial data may be broadly divided into data on insured persons, data on deferred beneficiaries, and data on beneficiaries. These are compiled based on the nearest actual data that can be used for all plans, and appear to be valid.

(3) Method of establishment of actuarial assumptions and values thereof

The actuarial assumptions used for the 2004 actuarial valuation were made based mainly on actual values. If differences corresponding to the features of plans are excluded, there are no major differences, and method of making and values appear to be valid.

(4) Process of the calculation of projections (algorithms)

In the case of all plans, estimates for the current fiscal year are progressively estimated based on the estimates for the previous fiscal year (inputting initial data as the initial values).

For the 2004 actuarial valuation, some simplifications were made depending on the plan by treating reenrollments as new enrollments and assuming that no accelerated payments were made. However, pension revisions were incorporated, and the calculation formulae were also generally considered valid.

## **6. Evaluation of pension finances**

(1) Future projections of the number of insured persons

Projections of the number of insured persons for all plans are made based on the medium variant of population projections of the National Institute of Population and Social Security Research. However, given that fluctuations in the population projections used have a major impact on finances and benefit levels, it is important to consider and implement all kinds of measures to make it more certain that these projections would be realized.

(2) Characteristics and trends in pension finances

Actuarially, if it is assumed that the initial data and actuarial assumptions used continue unchanged, and projections and actuarial valuations are performed by the Closed-period-balancing method every five years, then benefit levels and final contribution rates will be revised and approach to the values calculated by the Whole-future-balancing method in this actuarial valuation, and ultimately, benefit levels should be lower and final contribution rates higher than the results obtained by the Whole-future-balancing method in this actuarial valuation.

(3) Enhancement of scenarios in the case of changes in assumptions

When financial projections and actuarial valuations are performed in the future, estimates of more various scenarios should be made (including the estimates examined in this actuarial valuation) in order to obtain more accurate understanding of the stability of pension finances. Regarding economic assumptions, for example, estimates should be made assuming larger changes or changes in individual factors, while estimates also need to be calculated in case of mortality improves more than forecast by the population projections.



#### (4) Expression of assumptions

Assumptions regarding, for example, the future number of insured persons, widely known indices need to be used, such as the labor-force participation ratio or the unemployment rate. If other measures are used, their relationship to these indices should be explained.

#### (5) Longer-term estimates

The projection in this actuarial valuation suggests that the level of reserve will continue to decline from the later half of the estimation period to the final stage, and casts doubt on the future stability of pension finances. While recognizing the difficulty of depict the situation more than 100 years hence, methods and periods of estimation capable of answering these questions need to be considered.

#### (6) Stochastic Projection

One way of changing the assumptions is by Stochastic Projection. This is done by assuming a given probability distribution for each actuarial assumption, and calculating the future possibility (probability) of the financial status of the plan concerned by performing numerous estimates realized at that probability. While there are some problems regarding, for example, what distribution should be adopted for which actuarial assumption and how to maintain consistency between multiple actuarial assumptions, calculating such Stochastic Projections, even with some simplification, is likely to be necessary in order to examine the stability of the pension plans in greater detail, and should be considered by plan actuaries.

#### (7) Need for pension actuarial experts

Measures also need to be taken to provide each plan with pension actuarial experts with a detailed knowledge of actuarial analysis of pensions, such as certified pension actuaries, in order to obtain a better understanding of the characteristics of the pension finances of each plan and clarify responsibilities for projections formulated by actuarial valuation.

Table 1: EPI financial projections

Assumptions etc.: Final contribution rate 18.3%  
 Assumed national subsidy 1/2 achieved in FY2009  
 Adjustment period (year of termination) FY2023  
 Replacement ratio (in year of termination) 50.2%

Year (FY)	Contribution rate (% of annual earnings)	Revenue							Expenditure				Balance	Reserve at the end of fiscal year	Reserve at the end of fiscal year (in FY2004 value)	Extent of reserve	Reserve ratio	Total standard remuneration (total remuneration)
		Total revenue	Contributions	Subsidies by state etc.	Investment income	Contribution to the equivalent to benefits of Basic Pension	Others	NPSP contribution etc. (re-tabulated)	Total expenditure	Benefits	Contribution to Basic Pension	Others						
	%	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion		¥ trillion
2005	14.288	28.3	20.8	4.6	3.0		0.0	0.0	31.9	20.6	11.1	0.2	-3.6	163.9	163.9	5.2	6.2	146.9
2010	16.058	37.6	25.5	7.1	4.9		0.0	0.0	37.5	24.4	13.0	0.2	0.0	156.0	145.3	4.2	5.2	160.6
2015	17.828	44.0	30.8	8.1	5.1	Note 5	0.0	0.0	41.4	26.0	15.1	0.2	2.6	162.5	137.3	3.9	4.8	174.4
2020	18.3	49.2	34.8	8.6	5.8		0.0	0.0	43.3	26.6	16.5	0.2	5.9	186.3	141.8	4.2	5.2	190.0
2025	18.3	53.7	37.7	9.1	6.9		0.0	0.0	45.5	27.6	17.7	0.2	8.2	223.1	153.1	4.7	5.9	205.8
2030	18.3	58.2	40.0	9.9	8.3		0.0	0.0	49.5	29.8	19.4	0.2	8.7	266.6	164.9	5.2	6.6	218.7
2035	18.3	62.2	41.6	11.1	9.5		0.0	0.0	55.3	33.1	22.0	0.3	6.9	306.1	170.6	5.4	6.8	227.3
2040	18.3	66.2	43.1	12.8	10.3		0.0	0.0	62.9	37.2	25.4	0.3	3.3	330.1	165.8	5.2	6.5	235.6
2045	18.3	69.8	44.9	14.3	10.6		0.0	0.0	69.3	40.4	28.6	0.3	0.5	338.0	153.1	4.9	6.2	245.3
2050	18.3	73.5	47.2	15.7	10.6		0.0	0.0	74.8	43.1	31.4	0.3	-1.3	335.0	136.7	4.5	5.7	258.0
2055	18.3	77.1	50.0	16.9	10.3		0.0	0.0	79.2	45.2	33.7	0.3	-2.1	325.6	119.8	4.1	5.3	273.1
2060	18.3	80.6	52.8	17.8	9.9		0.0	0.0	82.9	47.0	35.5	0.3	-2.4	314.4	104.2	3.8	4.9	288.7
2065	18.3	83.8	55.6	18.7	9.5		0.0	0.0	86.7	49.0	37.4	0.3	-2.9	301.2	90.0	3.5	4.5	303.8
2070	18.3	87.0	58.4	19.6	9.0		0.0	0.0	90.8	51.1	39.3	0.4	-3.7	284.4	76.6	3.2	4.1	319.1
2075	18.3	90.4	61.4	20.6	8.4		0.0	0.0	95.0	53.4	41.2	0.4	-4.6	263.2	63.9	2.8	3.6	335.7
2080	18.3	94.2	65.0	21.7	7.6		0.0	0.0	99.6	55.9	43.4	0.4	-5.4	237.9	52.1	2.4	3.1	355.1
2085	18.3	98.6	69.1	22.8	6.7		0.0	0.0	104.6	58.5	45.7	0.4	-6.0	209.1	41.2	2.1	2.6	377.8
2090	18.3	103.6	73.9	24.0	5.7		0.0	0.0	109.8	61.3	48.0	0.5	-6.2	178.4	31.7	1.7	2.2	403.6
2095	18.3	109.1	79.1	25.3	4.7		0.0	0.0	115.4	64.4	50.5	0.5	-6.3	147.0	23.5	1.3	1.7	432.0
2100	18.3	115.1	84.8	26.6	3.7		0.0	0.0	121.5	67.7	53.3	0.5	-6.4	115.1	16.6	1.0	1.3	463.2

- Notes: 1. Long-term economic assumptions (FY2009 onward) are as follows:  
 Wage growth rate 2.1%  
 Price inflation 1.0%  
 Rate of investment return 3.2%  
 Disposable income growth rate 2.1% (1.9% until FY2017)
2. "Extent of reserve" means the ratio of reserve at the end of the previous fiscal year to total expenditure in the current fiscal year.  
 3. "In FY2004 value" is the value converted to FY2004 value using the wage growth rate.  
 4. The substitutional portion of Employees' Pension Fund is included.  
 5. Financial projections were performed by deducting contribution to the equivalent to benefits of Basic Pension offset between revenue and expenditure from both the revenue and expenditure sides.

Table 2: NPSP&LPSP financial projections (extent of reserve 1)

Assumptions etc.: Final contribution rate 18.8%  
 Assumed national subsidy 1/2 achieved in FY2009  
 Adjustment period (year of termination) FY2023

Year (FY)	Contribution rate (% of annual earnings)	Revenue							Expenditure					Balance	Reserve at the end of fiscal year	Reserve at the end of fiscal year (in FY2004 value)	Extent of reserve	Reserve ratio	Total standard remuneration (total remuneration)
		Total revenue	Contributions	Subsidies by state etc.	Subsidies for "bestowals" payments of prior period	Investment income	Contribution to the equivalent to benefits of Basic Pension	Others	Total expenditure	Benefits	Contribution to Basic Pension	Others	Pension insurer contribution (re-tabulated)						
	%	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million			¥100 million
2005	14.638																		
	13.738	76,249	41,346	5,477	16,954	7,383	5,088	0	76,084	60,398	15,385	301	301	165	465,226	465,226	6.1	9.6	300,427
2010	15.508	90,545	48,408	8,779	14,301	15,398	3,659	0	84,067	66,500	17,284	283	283	6,478	492,096	458,486	5.8	8.5	316,657
2015	17.278	95,067	55,502	9,644	11,151	16,384	2,386	0	88,749	69,410	19,074	264	264	6,319	523,321	442,095	5.8	7.9	325,649
2020	18.8	100,306	63,045	10,064	8,009	17,783	1,405	0	88,824	68,669	19,970	185	185	11,481	570,319	434,247	6.3	8.1	337,937
2025	18.8	102,961	66,654	10,603	5,251	19,699	754	0	89,855	68,575	21,095	185	185	13,106	631,982	433,705	6.9	8.5	356,479
2030	18.8	107,889	70,846	11,842	3,076	21,759	366	0	95,469	71,599	23,613	257	257	12,420	697,030	431,134	7.2	8.5	378,914
2035	18.8	113,281	74,300	13,707	1,550	23,567	157	0	103,489	75,708	27,374	407	407	9,792	753,106	419,845	7.2	8.4	397,387
2040	18.8	118,526	77,403	15,653	679	24,730	60	0	112,874	81,579	31,288	6	6	5,653	787,942	395,911	6.9	8.1	413,980
2045	18.8	123,475	80,461	17,238	279	25,476	20	0	119,621	85,153	34,468	0	0	3,854	810,710	367,147	6.7	7.9	430,324
2050	18.8	128,064	83,447	18,581	123	25,907	6	0	126,641	89,480	37,160	0	0	1,424	823,158	335,992	6.5	7.6	446,281
2055	18.8	132,669	87,008	19,659	47	25,955	1	0	133,183	93,866	39,317	0	0	-514	823,704	303,032	6.2	7.3	465,324
2060	18.8	137,120	90,654	20,705	8	25,753	0	0	139,410	98,000	41,409	0	0	-2,289	816,405	270,704	5.9	6.9	484,832
2065	18.8	141,473	94,460	21,865	0	25,149	0	0	147,143	103,415	43,729	0	0	-5,670	795,529	237,748	5.4	6.4	505,194
2070	18.8	146,001	99,067	23,043	0	23,891	0	0	156,289	110,202	46,086	0	0	-10,288	753,249	202,894	4.9	5.7	529,857
2075	18.8	151,489	105,288	24,218	0	21,983	0	0	165,020	116,585	48,435	0	0	-13,531	691,068	167,774	4.3	5.0	563,164
2080	18.8	157,098	112,060	25,256	0	19,782	0	0	171,311	120,799	50,512	0	0	-14,213	620,829	135,846	3.7	4.4	599,418
2085	18.8	162,280	118,542	26,268	0	17,470	0	0	177,743	125,208	52,535	0	0	-15,463	546,814	107,841	3.2	3.7	634,117
2090	18.8	167,302	125,163	27,351	0	14,789	0	0	186,247	131,546	54,701	0	0	-18,945	459,930	81,754	2.6	3.0	669,567
2095	18.8	172,231	132,176	28,625	0	11,431	0	0	196,157	138,908	57,249	0	0	-23,926	350,831	56,206	1.9	2.2	707,118
2100	18.8	177,889	140,526	30,157	0	7,206	0	0	207,650	147,336	60,314	0	0	-29,761	213,767	30,867	1.2	1.4	751,833

Note: Contribution rates in FY2005 are given in the upper row for NPSP and in the lower row for LPSP.

Table 3: PSP financial projections (contribution rate increase: 0.354%)

Assumptions etc.: Final contribution rate 18.5%  
 Assumed national subsidy 1/2 achieved in FY2009  
 Adjustment period (year of termination) FY2023  
 Replacement ratio (in year of termination) 48.7%

Year (FY)	Contribution rate (% of annual earnings)	Revenue						Expenditure					Balance	Reserve at the end of fiscal year	Reserve at the end of fiscal year (in FY2004 value)	Extent of reserve	Reserve ratio	Total standard remuneration (total remuneration)
		Total revenue	Contributions	National subsidy	Investment income	Contribution to the equivalent to benefits of Basic Pension	Others	Total expenditure	Benefits	Contribution to Basic Pension	Others	Pension insurer contribution (re-tabulated)						
	%	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million	¥100 million
2005	10.814	4,094	2,873	518	510	193	1	3,818	2,345	1,414	59	59	275	32,263	32,263	8.4	10.3	26,807
2010	12.584	5,633	3,534	834	1,135	131	1	4,458	2,774	1,620	64	64	1,175	36,614	34,113	7.9	10.1	28,401
2015	14.354	6,734	4,354	952	1,353	74	1	5,090	3,135	1,872	83	83	1,644	43,778	36,983	8.3	10.4	30,685
2020	16.124	8,008	5,293	1,016	1,665	33	1	5,651	3,493	2,012	145	145	2,358	54,057	41,160	9.1	11.2	33,195
2025	17.894	9,390	6,233	1,048	2,096	12	1	6,260	3,968	2,085	207	207	3,130	68,104	46,737	10.4	12.5	35,202
2030	18.5	10,499	6,737	1,138	2,620	4	0	7,153	4,752	2,271	129	129	3,346	84,843	52,478	11.4	13.6	36,741
2035	18.5	11,449	7,022	1,301	3,126	2	0	8,437	5,765	2,599	73	73	3,013	100,744	56,163	11.6	13.7	38,287
2040	18.5	12,346	7,293	1,507	3,546	1	0	10,002	6,989	3,012	1	1	2,344	113,751	57,156	11.1	13.1	39,769
2045	18.5	13,175	7,625	1,700	3,849	1	0	11,671	8,271	3,400	0	0	1,503	122,954	55,682	10.4	12.2	41,583
2050	18.5	13,939	8,044	1,875	4,020	0	0	13,265	9,514	3,751	0	0	675	127,957	52,229	9.6	11.2	43,875
2055	18.5	14,571	8,493	2,009	4,068	0	0	14,618	10,600	4,018	0	0	-48	129,132	47,506	8.8	10.2	46,324
2060	18.5	15,094	8,959	2,129	4,006	0	0	15,830	11,572	4,259	0	0	-736	126,808	42,047	8.1	9.3	48,865
2065	18.5	15,547	9,451	2,255	3,841	0	0	16,879	12,370	4,509	0	0	-1,332	121,293	36,249	7.3	8.4	51,550
2070	18.5	16,016	10,025	2,397	3,594	0	0	17,804	13,011	4,794	0	0	-1,789	113,201	30,492	6.5	7.5	54,688
2075	18.5	16,631	10,771	2,574	3,285	0	0	18,742	13,594	5,148	0	0	-2,111	103,255	25,068	5.6	6.5	58,768
2080	18.5	17,331	11,636	2,765	2,931	0	0	19,726	14,197	5,529	0	0	-2,395	91,847	20,097	4.8	5.6	63,492
2085	18.5	18,086	12,596	2,961	2,529	0	0	20,805	14,883	5,922	0	0	-2,719	78,937	15,568	3.9	4.6	68,732
2090	18.5	18,879	13,645	3,163	2,070	0	0	22,004	15,677	6,327	0	0	-3,126	64,158	11,404	3.1	3.6	74,456
2095	18.5	19,734	14,809	3,384	1,541	0	0	23,332	16,564	6,768	0	0	-3,597	47,128	7,550	2.2	2.5	80,813
2100	18.5	20,715	16,145	3,633	936	0	0	24,799	17,533	7,267	0	0	-4,085	27,677	3,996	1.3	1.5	88,111

Table 4: NP financial projections

Assumptions etc.: Final contribution (in FY2004 value) ¥16,900  
 Assumed national subsidy 1/2 achieved in FY2009  
 Adjustment period (year of termination) FY2023  
 Replacement ratio (in year of termination) 50.2%

Year (FY)	Monthly contribution (in FY2004 value)	Revenue						Expenditure				Balance	Reserve at the end of fiscal year	Reserve at the end of fiscal year (in FY2004 value)	Extent of reserve	Reserve ratio
		Total revenue	Contributions	Subsidies by state etc	Investment income	Contribution to the equivalent to benefits of Basic Pension	Others	Total expenditure	Benefits	Contribution to Basic Pension	Others					
	¥	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion	¥ trillion		
2005	13,580	4.0	2.1	1.7	0.2			4.2	0.1	4.0	0.1	-0.2	10.8	10.8	2.6	4.6
2010	14,980	5.6	2.6	2.7	0.3	Note 4		5.1	0.1	4.9	0.1	0.5	11.0	10.2	2.1	4.5
2015	16,380	6.5	3.0	3.1	0.4			5.9	0.1	5.7	0.1	0.7	13.8	11.7	2.2	4.9
2020	16,900	7.3	3.4	3.4	0.6			6.4	0.1	6.3	0.1	0.9	17.9	13.6	2.6	5.8
2025	16,900	8.1	3.7	3.7	0.7			7.0	0.1	6.8	0.1	1.1	23.2	15.9	3.2	6.9
2030	16,900	9.2	4.0	4.2	0.9			8.0	0.1	7.8	0.1	1.2	29.2	18.1	3.5	7.7
2035	16,900	10.2	4.2	4.9	1.1			9.2	0.1	9.0	0.1	1.0	34.7	19.4	3.7	8.1
2040	16,900	11.2	4.3	5.7	1.2			10.6	0.1	10.4	0.1	0.6	38.7	19.4	3.6	8.0
2045	16,900	12.2	4.5	6.4	1.3			11.8	0.1	11.7	0.1	0.3	41.0	18.6	3.4	7.6
2050	16,900	13.1	4.7	7.1	1.3			13.0	0.0	12.8	0.1	0.1	42.0	17.2	3.2	7.2
2055	16,900	14.0	5.0	7.6	1.3			14.0	0.0	13.8	0.1	0.0	42.2	15.5	3.0	6.8
2060	16,900	14.7	5.3	8.1	1.3			14.8	0.0	14.7	0.1	-0.1	41.9	13.9	2.8	6.4
2065	16,900	15.4	5.6	8.6	1.3			15.6	0.0	15.5	0.1	-0.2	41.1	12.3	2.6	6.0
2070	16,900	16.1	5.8	9.0	1.3			16.5	0.0	16.3	0.1	-0.3	39.7	10.7	2.4	5.5
2075	16,900	16.9	6.2	9.5	1.2			17.3	0.0	17.1	0.1	-0.4	37.7	9.2	2.2	5.0
2080	16,900	17.7	6.5	10.0	1.1			18.2	0.0	18.0	0.2	-0.5	35.2	7.7	2.0	4.4
2085	16,900	18.6	7.0	10.5	1.0			19.2	0.0	19.0	0.2	-0.6	32.3	6.4	1.7	3.9
2090	16,900	19.5	7.5	11.1	0.9			20.2	0.0	20.0	0.2	-0.7	29.0	5.2	1.5	3.3
2095	16,900	20.5	8.0	11.7	0.8			21.3	0.0	21.0	0.2	-0.7	25.4	4.1	1.2	2.8
2100	16,900	21.6	8.6	12.3	0.7			22.4	0.0	22.2	0.2	-0.8	21.6	3.1	1.0	2.3

Notes: 1. Long-term economic assumptions (FY2009 onward) are as follows:

Wage growth rate 2.1%  
 Price inflation 1.0%  
 Rate of investment return 3.2%  
 Disposable income growth rate 2.1% (1.9% until FY2017)

2. "Extent of reserve" means the ratio of reserve at the end of the previous fiscal year to total expenditure in the current fiscal year.
3. "In FY2004 value" is the value converted to FY2004 value using the wage growth rate. (The figures in parentheses indicate the nominal amounts.)
4. Financial projections were performed by deducting contribution to the equivalent to benefits of Basic Pension offset between revenue and expenditure from both the revenue and expenditure sides.
5. "Contribution to Basic Pension" includes the special national subsidy for Basic Pension benefits.