

## **Japanese Employees' Pension Insurance: Issues for reform**

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### **Abstract**

Population aging due to low fertility and increased longevity has a strong impact on public retirement programs. The Japanese public pension system was reformed in March 2000. Due to the rapid deterioration of the insured-beneficiary relation in the near future, however, the Japanese system is still forced to reestablish its long-term financial stability.

The purposes of this paper are 1) to describe the characteristics of the Japanese Employees' Pension Insurance (EPI) with some references to the German system, and 2) to discuss issues important for the future of the EPI. The first proposal for the next public pension reform was made public by the Government in December 2002, and we believe that it is very important to consider all possible options in the Japanese pension reform discussion.

### **1. Introduction<sup>1</sup>**

The entire working population has been covered by the public pension system since 1961 in Japan. Historically, it has been a Japanese characteristic to treat employees and non-employees, such as the self-employed or farmers, differently in the social insurance system, and to support the social insurance system for the latter through numerous government subsidies. The Basic Pension (BP), which was created in 1986 (Table 1), provides a flat rate benefit for all elderly. Participation in this scheme is mandatory for all residents between the ages of 20 and 60, and the monthly premium per participant is a flat rate of 13.3 thousand yen. The system provides an individual benefit proportional to the number of years of contribution, and the benefit for those with 40 years of participation is 67 thousand yen per month per person.

The Employees' Pension Insurance (EPI) covers most of the employees in the private sector, although it does not cover part-time workers. The contribution to the EPI is 13.6 percent of annual earnings shared equally by employees and employers. This contribution includes the premium of the BP for both employees and their dependent spouses<sup>2</sup>. The amount of old age pension received by retired employees is the sum of the Basic Pension (basic part) and the earnings-related part. The earnings-related benefit is proportional to the number of years of contribution and the level of lifetime earnings, and benefits accrue at the rate of 0.7125 percent of earnings without bonuses per yearly contribution<sup>3</sup>. The amount of earnings-

related benefit for those male employees whose earnings were average throughout the 40 years of working life was 108 thousand yen per month in 1999. Past earnings are revalued every five years to reflect the growth in post-tax earnings (net wage indexation). After retirement, pension benefits are indexed in line with price increase.

The main characteristics of the EPI are summarized as follows: a) earned benefits depending on former contributions; b) combination of flat rate benefit (basic part) and earnings-related benefit; c) income redistribution based on lifetime earnings; d) pay-as-you-go (PAYG) financing with accumulated fund payable for five years of benefits; and e) protection against inflation through adjusting benefits in line with a price increase. Benefit expenditure of the EPI was 4.1 percent of GDP in 2000. Model replacement rate of old age benefit for average male employees with 40 years' participation with dependent spouse is 59 percent of net annual earnings of active employees<sup>4</sup>(; this case is referred to as model replacement rate in this paper). However, the replacement rate of pension benefit to lifetime earnings changes according to the level of lifetime earnings and whether with or without dependent spouse (Table 2). The replacement rate of pension benefit for average male employees with 40 years' participation without dependent spouse, for example, is 43-44 percent.

The public pension systems for employees in the private sectors in Japan and Germany have much in com-

Table 1. History of Public Pension System in Japan and Germany

Japan		Germany	
1961	Introduction of National Pension	1957	PAYG system Dynamic pension (gross wage indexation)
1973	Improvement of benefit level, Introduction of CPI indexation	1972	Introduction of flexible retirement age (1973)
1985	Introduction of the Basic Pension (1986)	1986	Introduction of child credit
1994	Gradual increase in normal pension age for the basic part of the EPI, Net wage increase, Contribution from bonuses(1%)	1992	Net wage indexation, Benefit reduction for early retirement (2001)
2000	Gradual increase in normal pension age for the earnings related part of the EPI, Price indexation (2000), Reduction of accrual factor by 5 percent for the earnings related part of the EPI (2000) Contribution based on annual earnings (2003). Increase in govt. subsidy for Basic Pension	1997	Extention of coverage (1999) Expansion of child credit (1999)
		2001	Benefit reduction in PAYG system, Introduction of a tax-supported voluntary funded pension program

Note : Implementation year in parenthesis  
Source : Fukawa (2002). Schmaehl (2000).

mon: pay-as-you-go financing method; earnings-related contributions and benefits; defined benefits; etc. However, there are some remarkable differences between the two countries. The Japanese system has a flat rate benefit part, which of course increases the degree of income redistribution. The German pension system places more weight on supporting childcare and long-term care, and it suffers more from early retirement and high unemployment than the Japanese system (OECD, 1999a; Schmaehl, 1999; Schmaehl, 2000).

The latest public pension reforms in Japan and Germany have the same aim: to establish middle- and long-term stability of the system against ageing of the population. In Germany, the financing basis has been actively extended, and the 2001 Reform invented a new formula to offset the reduction of public pension benefits by introducing a tax-supported voluntary corporate/private funded pension program (Table 1). In Japan, trying to redefine the role of the public pension system and making the system less vulnerable to economic and demographic changes, the public pension reform in March 2000 and subsequent reforms in the corporate pension area employed such measures as

- 1) to expand the financing basis of the EPI;
- 2) to reduce the benefit level of the EPI; and
- 3) to rely more on private arrangements.

## 2. Recent reforms and the next reform in FY 2004

The EPI has been reviewed every five years. The normal pension age was increased from 60 to 65 years for the basic part of the EPI in the 1994 Reform (gradual implementation between 2001 and 2013 for males and between 2006 and 2018 for females). The following measures were also introduced in the 1994 Reform: a) revaluing past earnings in line with net wage increase (from gross wage increase); b) levying a contribution from bonuses, although the rate is only one percent; c) increasing work incentives for working pensioners aged 60-64; and d) exempting contributions (employee part only) during the child rearing period. In March 2000, more fundamental measures were decided to reestablish its long-term financial stability as listed below (2000 Reform):

- 1) Benefit reduction of five percent in the earnings-re-

lated part and benefit adjustment in line with price increase (not net wage increase) starting from April 2000; 2) Gradual increase of normal pension age for the earnings-related part from 60 to 65 years over the period 2013-2025 for males and 2018-2030 for females; 3) Expansion of contribution base from monthly earnings to annual earnings starting from April 2003; 4) Increase in government subsidy from the present one-third to one-half of the Basic Pension expenditure by the year 2004.

It is estimated by the Government that these measures combined would reduce the total pension spending in 2025 by 20 percent, keeping the final contribution rate at 20 percent of annual earnings.

In January 2002, a new population projection was made public which was based on the 2000 Population

Census. Concerning the assumption on future fertility rate, middle scenario assumed that the total fertility rate (TFR) would stabilize at 1.39 (low scenario at 1.10, high scenario at 1.63). Japanese life expectancy, which is already among the highest in the world, is increasing steadily, and assumptions on the future death rate are also quite important. Life expectancy at birth was assumed to increase by 1.7 years for males and 2.5 years for females in the 20 years until 2020. According to the middle scenario of this projection, the total Japanese population will reach 127.7 million in 2006, then decline gradually for many years afterwards. The proportion of the elderly (65+) will increase from 17 percent in 2000 to 28 percent in 2020 and 35 percent in 2045.

Based on the latest population projection, the Ministry of Health, Labor and Welfare (MHLW) announced

Table2. The levels of old age pension for those male employees who are insured for 40 years in the EPI (After FY1999 Reform)

Net wage/Gross wage (x)	Lifetime earnings level (Average=1.0) (y)	Replacement rate of pension benefit to lifetime earnings (%)	
		Without dependent spouse	With dependent spouse
0.84	0.5	59.5	92.9
	1.0	42.8	59.5
	1.5	37.2	48.4
	2.0	34.5 (Note 1)	42.8 (Note 1)
0.8	0.5	60.8	94.2
	1.0	44.1	60.8
	1.5	38.5	49.7
	2.0	35.8 (Note 1)	44.1 (Note 1)

Average monthly earnings (excluding bonuses) of male employees :  $W_m$

Average gross annual earnings of male employees :  $W_a = 1.3W_m$

Average net annual earnings of male employees :  $W = xW_a$

Example in 1999 (in thousand yen per month):  $W_m = 367$ ,  $W_a = 477$ ,  $W = 401$

Old age pension amount (B) for those male employees who are insured for 40 years in the EPI

Without dependent spouse

$$\begin{aligned} B &= 67 + (95\% \text{ of } 0.75)(1/100) 40 yW_m \\ &= 67 + 0.285yW/(1.3x) \\ &= 0.167W + 0.219yW/x \end{aligned}$$

With dependent spouse

$$B = 0.334W + 0.219yW/x$$

Replacement Rate(R) of pension benefit to lifetime earnings  $R = B/yW$

Without dependent spouse

$$R = 0.167/y + 0.219/x$$

With dependent spouse

$$R = 0.334/y + 0.219/x$$

(Note1) Actual replacement rate should be smaller because of the ceiling of earnings subject to public pension contribution and benefit.

(Note2) Benefit formula of earnings related part

$$0.7125\% n yW_m = 0.548\% n yW_a = 0.652\% n yW \text{ (if } x = 0.84)$$

Source: Fukawa(2003)

its first reform proposal in December 2002, for the next public pension reform scheduled for FY 2004. The following are the main points of the proposal:

- To increase government subsidy from the present one-third to one-half of the Basic Pension expenditure<sup>5</sup>;
- To raise the contribution rate as scheduled (it was scheduled to be increased every 5 years, but increase in 2000 was postponed due to bad economic situations);
- To set a ceiling on the future contribution rate and reduce benefit by applying lower indexation scale of benefit;
- To cover part-timers in order to increase contributors;
- To improve child raising leave;
- To tax on pension benefits; etc.

The Ministry showed simulation results for two models (Table 3): Model 1 (Maintain Benefit) to keep the present benefit level and increase contribution rate accordingly; Model 2 (Fix Contribution) to set a ceiling on the contribution rate at 20 or 18 percent and decrease benefit accordingly<sup>6</sup>. The contribution rate will increase from present 13.6 to 23.1 percent in 2025 for Model 1, assuming that the government subsidy is one-half of the Basic Pension expenditure. On the other hand, the model replacement rate will decrease from the present 59 percent

to 52 percent in 2025 for Model 2, assuming that the contribution rate will be increased gradually<sup>7</sup> but be fixed at 20 percent in 2022 and afterwards. Other than the Base Case, such cases as with different population variables and different economic variables are also shown in Table 3. Both demographic and economic assumptions have significant impacts on the future picture of the EPI.

When there is a ceiling on the future contribution rate, the way to control expenditure becomes all the more important. Although there are several ways to control expenditure, further increase in the normal pension age is off the agenda. The proposal by the Ministry has chosen the way of adjusting benefit more slowly. Previous earnings will be revalued in line with total net wages of all insured, instead of present average net wage increase. If we denote total net wage increase minus average net wage increase as D, pension benefit will be increased each year in line with price increase minus D, instead of present price increase. The package of these adjustments is called "macro economy slide".

Part-time workers will also be included in the EPI. Currently, those whose working hours are less than three-fourth of regular workers are defined as part-timers. If part-timers satisfy the following two conditions, they are

Table 3. Simulation results for various cases

	Basic Case	Population Variables		Economic Variables		Modest Case
		High	Low	Case A	Case C	
EPI (% of annual earnings)						
Final contribution rate of Maintain Benefit	23.1 (2030)	21.0 (2024)	26.6 (2040)	22.4 (2028)	26.0 (2038)	-
Final replacement rate of Fix Contribution	52 (2032)	57 (2020)	45 (2040)	54 (2029)	45 (2048)	45 (2043)
National Pension (thousand yen per month in 1999 price)						
Final contribution of Maintain Benefit	20.5 (2016)	19.0 (2014)	22.5 (2020)	19.8 (2015)	22.3 (2019)	-
Final contribution of Fix Contribution	18.1	18.2	17.9	18.1	17.8	16.4

Note 1. Economic Variables after 2008

Case A : Wage increase 2.5%, Price increase 1.5%, Rate of return 4.0%

Case B : Wage increase 2.0%, Price increase 1.0%, Rate of return 3.25%

Case C : Wage increase 1.0%, Price increase 0.5%, Rate of return 2.0%

Note 2. Basic Case means middle scenario for Population Projection, Case B for Economic Variables, and 20 % for the final contribution rate of EPI.

Note 3. Modest Case is similar to Base Case except the final contribution rate of the EPI assumed as 18 %.

Note 4. National subsidy is assumed as 50 percent of Basic Pension benefits for all cases.

Note 5. Years in parenthesis.

Source : Ministry of Health, Labor and Welfare.

classified as the third group of those insured in the BP<sup>8</sup> and exempt from paying social security contributions: 1) their spouses are covered by the EPI, and 2) their annual earnings are less than 1.3 million yen. The Ministry is considering to lower the threshold to one-half in terms of working hours and 650 thousand yen for annual earnings.

In order to support to increase the population in future generations, various measures to help raise children will be incorporated in the pension scheme.

### 3. Issues for the future of the EPI

Consecutive efforts have been made to reform the EPI since 1985. The most serious problems in the Employees' Pension Insurance (EPI) before the 2000 Reform were 1) the height of eventual contribution rate in order to maintain the present benefit level, and 2) the degree of inter-generational inequality in the contribution-benefit relation due to the PAYG financing system, which is vulnerable to demographic changes and economic fluctuations. Other than these serious problems, there are several inconsistencies in the present system: 1) dependent spouses of employees are treated favorably; 2) pension benefit has negative effects on labor force participation of the elderly, and 3) most pensioners do not pay income taxes. The proposal for the next reform in 2004 has a few new measures, but there are still several important issues to be discussed.

According to the proposed rule, more than 90 percent of the present part-timers will be covered by the EPI (Yamamoto, 2003b). This measure will have some positive effect on the revenue of the EPI in the short term, even though the wage level of part-timers is low. However, the real financial implication of this measure depends on the benefit formula. If the minimum of the EPI benefit remains at the present level, most part-timers will receive benefits which are well above their contributions. In that

case, the new contribution schedule proposed by the Ministry in December 2002<sup>6</sup> may not be enough, and further benefit reduction might be needed.

Pension benefit as an income source after retirement is another crucial issue. Earnings and public pension benefits are two dominant sources of income for the elderly in Japan. Public pension benefits were dominant in most elderly households in both Japan and Germany (Table 4). On the other hand, earnings are quite important for the elderly in the highest income quintile in both Japan and the US. In the light of the fairly high share of earnings for those in the top quintile, it is clear that the role of public pension benefit is overwhelming for completely retired elderly households in Japan. One reading of the proposal by the Ministry is to reduce the share of public pension benefit for the top three quintiles by 10 percentage points through reducing earnings-related benefits in the public pension including the EPI (Fukawa, 2003).

The contribution rate will be increased from the present 13.6 to 23.1 percent in 2025 for Model 1 in the EPI. This means that the effective contribution rate also covering those parts financed by tax would increase from the present 16 percent to 32 percent in 2025. The future level of effective contribution rate in the EPI is more or less the same as in Germany, and this effective rate, not nominal rate, should be compared with the rate of 12.4 percent in the US. The issue here is an optimum scale of the EPI for the Japanese working population in order to provide meaningful retirement income within an affordable level of contribution.

The main features of Fix Contribution compared to Maintain Benefit are 1) introduction of a ceiling on future contribution rate (namely, contribution rate will be raised gradually up to the ceiling), and 2) indexation of benefit in line with macro economic growth ("macro economy slide"). Further options for the future reform of

Table 4. Shares of Different Income Sources of the Elderly (65+) by Income Quintile

(In percent)

Income Sources	Germany 1996						Japan 1997						USA 2000					
	1	2	3	4	5	Total	1	2	3	4	5	Total	1	2	3	4	5	Total
Earnings	2	6	10	14	19	8	4	7	8	10	46	26	1	3	7	14	35	19
Public Retirement Benefits	87	80	72	64	55	76	87	83	87	86	40	64	83	85	71	57	29	50
Pension and Annuities	3	3	3	5	8	3	-	-	-	-	-	-	2	4	10	13	9	10
Income from Assets	6	10	14	16	18	12	2	1	3	2	11	6	3	5	9	13	24	18
Others	2	1	1	1	0	1	8	9	3	2	3	4	11	3	3	3	3	3

Sources : Schwarze and Frick(1999), Fukawa (2003), SSA (2002)

the EPI are listed in Table 5. It is a big issue whether to include self-employed in the EPI. In Japan, earnings of self-employed are usually lower than that of employees, and financial implication of the measure to include self-employed in the EPI will depend very much on the structure of the benefits. Yamamoto (2003b) examined the effects of this measure under such conditions as 1) no flat-rate benefit, and 2) different accrual rate by income level, and showed that it would be possible to provide equivalent benefits as Fix Contribution of 20 percent if the contribution rate was raised to 18.5 percent immediately. Immediate increase of the contribution rate has already been proposed by many researchers (Hatta, 1998; for example).

It is another fundamental issue whether to have a flat-rate benefit part in the EPI. The BP is progressive in terms of benefit, but it is quite regressive in terms of contribution. The share of the BP part is slightly less than 50 percent of the total EPI old-age benefits in 2000, but the share is expected to increase in future because benefit cut is focused on the earnings-related part only. It is an important function to have an income redistribution based on lifetime earnings, which is only done by the public pension system. However, if the flat-rate part of a system

is too large, it has a negative effect on work incentive.

#### 4. Final Remarks

Japan is already among the most aged societies among the OECD countries. Public pension spending is 7.3 percent of GDP in Japan, which is higher than that in the US (6.8 percent) but considerably lower than the 10.3 percent of that in Sweden, 12.0 percent in Germany and 13.1 percent in France (OECD, 2001c). However, Japanese public pension expenditure will increase quite rapidly in future. Therefore, it is of great interest for Japan to review how the role of the public pension system is going to be redefined and how the system will be reformed against economic and demographic changes in the other developed countries. We already have many examples of such efforts: notional defined contribution (DC) approach in Sweden, tax-supported funded pension approach in Germany, and personal retirement account approach in the United States.

It seems to us that there is still much room to reform the EPI. The most important factors for the sustainability of the EPI are fairness of the system and

Table 5. Reform options for the EPI

	Current system	2004 Reform options		Further options
		MB	FC	
Coverage				
Part-timers	No	Yes	Yes	Yes
Self-employed	No	No	No	Yes
Contribution				
Maximum earnings subject to contribution	Yes	Yes	Yes	Eliminate
Proportion financed by tax revenue (%)	13			20
Final contribution rate : nominal (%)		23.1	20	18
Benefit				
Normal pension age	65	65	65	Eliminate
Type of benefit : F (flat rate) or LS (lifetime salary)	F+LS	F+LS	F+LS	LS
Replacement rate of model pension (%)	59	59	52	
Minimum gurantee	Y/N	Y/N	Y/N	Yes
Revaluation of previous earnings (Note 1)	nW	nW	TnW	gW
Indexation of benefits (Note 2)	P	P	P'	P
Taxation on benefits	(No)	(No)	Yes	Yes

Note 1: Revaluation of previous earnings in line with per capita gross wage (gW) or per capita net wage (nW) or total net wage (TnW).

Note 2: Indexation of benefits in line with Price (P) or  $P' = P - (nW - TnW)$

Note 3: MB and FC in 2004 Reform options mean as follows : MB = Maintain Benefit  
FC = Fix Contribution



public trust in the system. The role of the public pension, such as degree of income redistribution, degree of social solidarity, degree of linkage between contribution and benefit, etc., should be defined and agreed upon. It is also necessary to define which benefits will be covered by the public fund, and to avoid different treatment against different income sources. Once the principles of the EPI are agreed upon, the next issue is the consensus on the scale of the public system, which is quite dependent on the specifics of contribution and benefits of the EPI. In any case, it is the mission of the public pension system to provide meaningful benefits to the elderly within an affordable level of contribution for the working population. There are many ways to accomplish this mission, and specifics of the system will be laid down against the contexts of each country.

## NOTES

<sup>1</sup> This part is rewritten based on Fukawa (2001) and Fukawa (2002).

<sup>2</sup> Dependent spouses of employees are called the third group of insured in the Basic Pension. The treatment of this group is one of the focus issues for the next reform.

<sup>3</sup> Benefit is calculated as 0.7125 percent of assessed earnings per year of contribution. Contribution is levied based on annual earnings since April 2003. This change is both revenue neutral and benefit neutral, and the contribution rate was reduced from 17.35 to 13.58 percent for monthly earnings. Benefit accrual factor for the earnings-related part was 0.7125 percent of earnings without bonuses until March 2003, but it is 0.548 percent of annual earnings or 0.652 percent of net annual earnings (after income tax and social security contributions) since April 2003, as shown in Table 2. It is important to remember that this change of accrual rate does not accompany any benefit reduction.

<sup>4</sup> Example in 1999 (in thousand yen per month) Average net annual earnings of male employees:  $W = 401$ . Old age pension for those male employees with average earnings who are insured for 40 years with dependent spouse:  $B = 134 + 104 = 238$ .  $B/W = 59\%$

<sup>5</sup> This has already been decided in the 2000 Reform, but not yet implemented because the way to finance it is not settled yet. Many argue for increasing consumption tax to finance it.

<sup>6</sup> It will surely be included in the policy options for the

2004 Reform to cover part-timers in the EPI. However, this measure is not reflected in the simulation results of the Ministry which was made public in December 2002.

<sup>7</sup> The scheduled increase in contribution rate for Maintain Benefit is as follows: 14.29% in 2005, 16.06% in 2010, 17.83% in 2015, 19.60% in 2020, 21.37% in 2025, and 23.10% in 2030. The contribution rate will be fixed to 20% after 2022 for Fix Contribution.

<sup>8</sup> The number of such people is about 10 million.

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