# Sustainable structure of the Japanese public pension system viewed from a Germany-Japan comparison

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Japan and Germany share similar features – ageing of the population, dominance of the social insurance system and strong pressure for reform. Germany takes the lead in many fields of welfare state reform, and reform experiences in Germany have been and will continue to be very useful for reform discussion in Japan. As Japan faces similar problems, Japanese experiences will also be relevant for reform discussion in Germany.

After a brief description of public pension systems in Japan and Germany (Section 1), this paper compares the roles of public pensions in Japan and Germany (Section 2), reviews recent reforms in both countries (Section 3), discusses the future direction of the Japanese pension system (Section 4), and draws some conclusions (Section 5).

## 1. Overview of public pension systems in Japan and Germany

The entire working population has been covered by a public pension system since 1961 in Japan, but employees and the self-employed are covered by different schemes: the Employees' Pension Insurance (EPI) for private sector employees; the National Pension (NP) for the self-employed, farmers and others; and Mutual Associations for public sector employees. The Basic Pension (BP) was created in 1986, which provides a flat-rate benefit for every elderly person. Therefore, the Japanese public pension is a multi-tiered system, and the Basic Pension is the first tier (Note 1). In order to help finance the first-tier pension, tax revenues equivalent to one-third of the actual benefit expenditure are transferred to this scheme by the central government. The National Pension provides only the Basic Pension. The full Basic Pension for 2006 is 792,000 yen per year, corresponding to 14 percent of average earnings. The value of the Basic Pension is price-indexed.

The EPI covers most of the employees in the private sector, although it does not cover part-time workers. The contribution to the EPI is 14.6 percent of annual earnings in 2006, shared evenly by employers and employees. The second-tier earnings-related pension benefits are proportional both to the number of years of contribution and the average level of earnings. The amount of Old-age Pension received by retired employees is the sum of the Basic Pension (basic part) plus the earnings-related part. A model replacement rate of the EPI Old-age Pension (average wage earner with a dependent spouse who participated for 40 years) is 59 percent of the net annual earnings of active male employees (Note 2). An additional flat-rate benefit of about 20,000 yen per month is paid for the dependent spouse.

Japanese expenditure on public pensions was 8.9 percent of GDP in 2004: 4.7 percent for EPI, 2.9 percent for NP. For retired people, public pension benefits are the most important income source. According to the Comprehensive Survey of the Living Conditions of People on Health and Welfare of the Ministry of Health, Labour and Welfare (MHLW), the share of public pension benefit for the elderly households (elderly singles or couples aged 65 and over) was 72 percent in 2003, and about 60 percent of elderly households depended completely on public pension. While these benefits together with earnings constitute the two dominant sources of income for the elderly in Japan, corporate pensions have not been well measured in the survey.

The public pension system in Germany (GRV= gesetzliche Rentenversicherung) has a single tier: an earnings-related plan. The pension is payable from age 65 with five years of contribution and from age 63 with 35 years of contribution. Fewer than five years of contribution earns no benefit. A contribution of one year at the average earnings earns one pension-point. Contributions are levied on monthly earnings between 325 and 5,250 euro in 2006 (the contribution rate is 19.5 percent). The floor and ceiling are equivalent to 12 and 200 percent of average earnings respectively. People in short-term employment (up to 50 working days per year) are exempted regardless of their earnings, but people who work 15 hours or more per week must contribute even if their earnings fall below the floor. The ceiling also applies to the number of pension-points earned. The sum of points at pension age is multiplied by a monthly "pension-point value" which is updated annually in line with gross wages subject to an adjustment for increases in the contribution rate to the public scheme.

## 2. Role of public pensions in Japan and Germany

Table 1 reviews the Japanese and German public pension systems in the international context. Public pension spending was 7.9 percent of GDP in Japan in 2001, which was higher than that in the US (6.6 percent), but considerably lower than the 11.0 percent in Germany and 12.5 percent in France. Concerning old age benefits, the UK and the US are lower than Japan, but Japanese disability benefits are quite low. Japanese public pension expenditure

is expected to increase in the future. Japan enjoys the highest life expectancy at birth among the six countries shown in Table 1, and life expectancy at age 65 in Japan is higher by three years than that in Germany, for example. Early retirement prevails in France and Germany, where only small percentage of those who have passed beyond 60 years of age remain in the labor market. The ways of revaluating previous earnings as well as adjusting benefits after retirement are also important factors influencing the size of public pension expenditure. In many cases, the former is in line with wage increases (gross or net), and the latter is in line with consumer price increases (Fukawa, 2004). Past earnings are revalued every five years to reflect the growth in post-tax earnings, and between reevaluations, the amount of the benefit is indexed to the increase in the CPI in Japan. After retirement, the same indexation rules apply to benefits as apply to the revaluation of past earnings. In the US, no tax revenues other than tax on pension benefits are allocated to the pension system. The contribution rate in Sweden is 18.5 percent of pensionable earnings (earnings minus employee contribution), which means that the actual contribution rate is 17.21 percent (Note 3). There is a ceiling on earnings applied to calculate contributions; it is set at 620,000 yen a month, equivalent to 195 percent of average earnings for the Japanese EPI.

**Table 1 Public Pension Systems in 6 Countries**

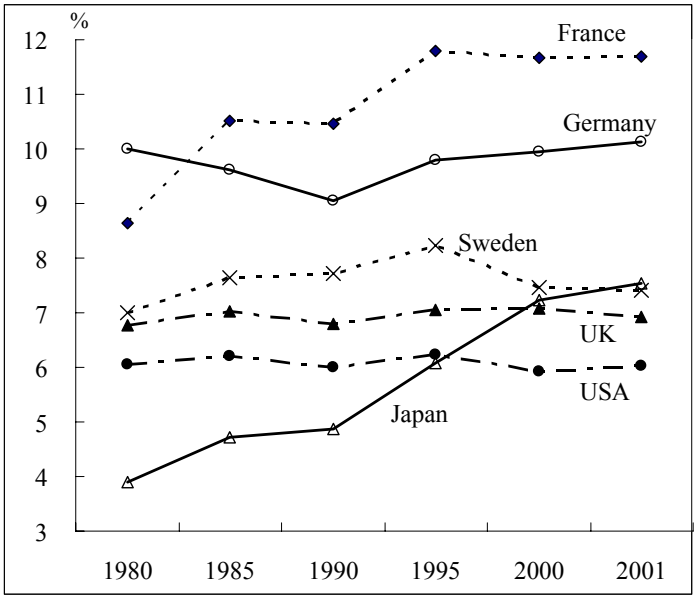
| | | France | Germany | Japan | Sweden | UK | USA |
|---|---|---|---|---|---|---|---|
| Benefit | | | | | | | |
| Pension expenditure 2001 a) % of GDP | | 12.5 | 11.0 | 7.9 | 9.3 | 9.0 | 6.6 |
| Old-age | | 10.2 | 9.8 | 6.4 | 6.8 | 6.4 | 5.2 |
| Survivor | | 1.5 | 0.3 | 1.2 | 0.6 | 0.5 | 0.8 |
| Disability | | 0.8 | 0.9 | 0.3 | 1.9 | 2.1 | 0.6 |
| Type of benefit | | DB | DB+ | DB | NDC +DC | DB | DB |
| Program for employees | | | | | | | |
| Normal pension age | | 60 | 65 | (65) | 61- | 65 | (67) |
| Net replacement rate (%) | 40ys | | 62 | 59 | | | |
| Average retirement age | | 58.1 | 60.2 | 62 | | | |
| Basis for benefit b) c) | | b25 | LS | LS | - | LS | b35 |
| Accrual rate (%) c) | | 1.75 | 1.00 | 0.71 | 1.21 | 0.89 | 0.91 |
| Revaluation of previous earnings | | P | gW | nW | - | gW | gW d) |
| Indexation of benefit | | P | g'W e) | P | f) | P | P |
| Financing : Program for employees | | | | | | | |
| Financing method | | PAYG | PAYG | PAYG | PA+F | PAYG | PAYG |
| Financing structure 2000 | % | | (2002) | | | | |
| Contribution | | | 74 | 71 | 74 | 77 | 85 |
| Tax | | | 25 | 13 | 17 | 22 | - |
| Others | | | 1 | 16 | 9 | 1 | 15 |
| Contribution rate 2003 | % | 25.5 | 19.5 | 13.6 | 17.21 | | 12.4 |
| Ceiling of contribution % of av. earnings | | 135 | 190 | 195 | 160 | 156 c) | 240 |
| Characteristics and Issues | | | | | | | |
| Coverage of part-time workers | | Yes | Yes | No | Yes | Yes | Yes |
| Level of survivors' pension | | 54% | 55% | 61% | - | | 2/3 |
| Consideration to child raising | | Yes | Yes | Yes | Yes | | excl. |
| Consideration to long-term care giving | | Yes | Yes | No | No | | No |
| Weight of various pension benefits (%) | | | | | | | |
| public | | 98 | 91 | 90 | 85 | 60 | 80 |
| corporate + individual | | 2 | 9 | 10 | 15 | 40 | 20 |
| Labor force participation rate 2004 | Male | 19.0 | 37.7 | 70.7 | 65.3 | ··· | 57.0 |
| for 60-64 g) | Female | 16.2 | 19.7 | 39.7 | 58.1 | ··· | 45.4 |
| Cash expenditure for the elderly h) % of GDP | | 13.6 | 12.8 | 8.2 | 11.2 | 10.5 | 7.1 |
| Gini coefficient of aged population i) | | 0.269 | 0.269 | 0.338 | 0.216 | 0.278 | 0.369 |

a) OECD (2004), Social Expenditure Database 1980-2001.
b) b25 = best 25 years, LS = Lifetime Salary
c) OECD (2005), Pension at a Glance: Public Policies across OECD Countries.
d) gW until 60 years old, P for 62 - 67 years old
e) g'W = gW - Pension Contribution
f) gW increase (%) minus 1.6 %
g) ILO (2005), Yearbook of Labour Statistics
h) Cash benefits for Old Age. Survivors, and Incapacity related benefits among public programs in 2001 based on OECD Social Expenditure Database.
i) Forster and Mira d'Ercole (2005), Fukawa (2006); around 2000

Part-time employees are covered by the pension program for employees with the exception of Japan. Where pension benefits are closely linked to contribution payments during working life, women receive on average much lower old-age pensions than men, because of interrupted working careers due to child-rearing, etc. Therefore, the level of Survivors' Pension is closely linked to the issue of improving individual pension entitlements for women. In Germany and Sweden, there are notions of reducing and eventually eliminating widow's pensions (Fukawa, 2004). 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 (Schmähl, 2002a). The share of public pension benefits among all pension benefits is high in France, Germany and Japan, and the share of corporate/individual pension is high in Sweden, the UK and the US. Whereas in the UK, private corporate pensions have become the norm in most regular reasonably paid jobs (Glennerster, 2003), and the UK government is trying to further reduce the role of public pensions, public pensions have been the norm for most employees in France, Germany and Japan.

Fig. 1 shows the historical trends of old age and survivors' pension benefits as a percentage of GDP in six countries. Only two countries, France and Japan, have experienced a large-scale increase in the past 20 years, and the public pension expenditure is still expected to increase in the future in Japan. The existence of the National Pension with flat-rate benefits explains partly the difference between Japan and Germany.

**Fig.1 Old age and survivors pention as percent of GDP: 1980-2001**




Source: OECD (2004), Social Expenditure Database 1980-2001.

The main characteristics of the Japanese EPI are summarized as follows (Fukawa and Yamamoto, 2003): a) earned benefits depending on former contributions; b) earnings-related contributions and benefits, although actual benefits are the combination of flat-rate benefits (Basic Pension) and earnings-related benefits; c) income redistribution based on lifetime earnings; d) Pay-As-You-Go (PAYG) financing method with accumulated funds payable for pension benefits for six years; and e) protection against inflation through adjusting benefits in line with price increase. The public pension systems for employees in the private sectors in Japan and Germany have much in common. However, there are some remarkable differences between the two systems. The Japanese system has a flat-rate benefit part, which of course increases the degree of income redistribution and the EPI has some accumulated funds, which can be used to modify the degree of intergenerational inequality in the contribution-benefit relation due to the PAYG financing system (Fukawa, 2004). In German system, benefits are proportional to the earnings and pension reserves are just for liquidity purposes.

The EPI covers only about half of the working population because part-time employees and the self-employed are excluded from the EPI (Table 2). Benefit expenditure of the EPI was 4.7 percent of GDP in 2004. One-third of the Basic Pension expenditure is financed by government subsidy in Japan. The planned final contribution rate is 18.3 percent, and if tax revenues allocated to the pension system were to be covered by contributions, the "effective contribution rate" would be 22 percent in

Japan, compared to 12.4 percent in the US where no tax revenues are allocated to the pension system (Fukawa, 2004). The benefits accrue at the rate of 0.548 percent of earnings per year (Note 4). The Basic Pension part aside, the benefit accrual rate for the earnings-related part of the EPI is almost half of the German system.

**Table 2 Some key indices of public pension systems for employees in Japan and Geamany**

| | Japan (EPI) | | | Germany (GRV) | | |
|---|---|---|---|---|---|---|
| | 2000 | 2004 | future | 2000 | 2004 | future |
| Coverage of working population (%) | 49 | 51 | | 85 | 82 | |
| Pension Benefit/GDP (%) | 4.1 | 4.7 | | 9.6 | 9.5 | |
| Old-age | 3.3 | 3.4 | | 7.0 | | |
| Survivor | 0.7 | 0.8 | | 1.8 | | |
| Disability | 0.1 | 0.1 | | 0.8 | | |
| Revenue/GDP (%) | 5.5 | 6.3 | | 11.5 | 10.5 | |
| Contribution | 3.9 | 4.3 | | 8.1 | 7.7 | |
| National Subsidy | 0.7 | 0.9 | | 2.7 | 2.8 | |
| Interest/Others | 0.9 | 1.1 | | 0.7 | 0.0 | |
| Contribution rate (%) a) | 13.6 (15) | 13.9 (15) | 18.3 (22) | 19 (26) | 19.5 (28) | 22 (31) |
| Earnings-related Benefit | | | | | | |
| Share (%) | 76.6 | 69.3 | | 100 | | |
| Benefit accrual rate (%) | 0.548[b] | | | 1.07[c] | | |
| Gross replacement rate for 40 years of participation according to lifetime earnings level (1.0 = average) | d) | | | | | |
| 0.5 | 50.0 (78.1) | | | 42.8 | | |
| 1.0 | 36.0 (50.0) | | | 42.8 | | |
| 2.0 | 28.4 (35.4) | | | 40.7 | | |
| Social Insurance Contribution Rate (%) | 2006 | | | 2006 | | |
| Health Insurance | 8.2; 7.4 | | | 13.3 | | |
| maximum earnings per month | ¥980,000 | | | 3,937.5 E | | |
| Pension Insurance | 14.6 | | | 19.5 | | |
| maximum earnings per month | ¥620,000 | | | 5,250 E | | |
| Unemployment Insurance | 1.6 | | | 6.5 | | |
| Care Insurance (%) | ( 1.0 ) | | | 1.7 | | |
| Consumption tax, VAT (%) | 5 | 5 | | 16 | 16 | 19 |

a) Effective contribution rate in parenthesis, which is calculated as if tax revenues allocated to finance pension benefits were also covered by contribution.
b) (0.75 × 0.95)/1.3 = 0.548
c) (42.8/40) = 1.07
d) figures for those with dependent spouse in parenthesis
Source: Social Security Agency (2006), Annual Report FY 2004. Rentenversicherungsbericht 2005.

A single GRV system covers 82 percent of the working population in Germany. The share of the national subsidy including tax revenues earmarked for the pension system was enlarged in order to avoid an increase in the contribution rate. Income redistribution is considered in Germany to be done not by contributions but by tax revenues, and the share of the national subsidy has increased accordingly (Fukawa, 2004). The contribution rate now is 19.5 percent, and the ceiling of the contribution rate is set at 20 percent until 2020 and 22 percent until 2030. However, the "effective contribution rate" is about 26 percent now and will eventually be 31 percent in Germany (Table 2).

### 3. Public pension reforms in Japan and Germany

#### (1) Public pension reforms in Japan

The Japanese public pension system is required by its statutes to review its financial stability once every five years, and public pension reform has been carried out together with this financial review (Table 3). Benefit improvement was the main issue in the 1960s and 1970s. However, benefit reduction in various forms as well as the increase in the effi-

ciency and fairness of the system have been the main focus of the reforms since the 1980s. The Basic Pension introduced in 1986 reduces the financial burden of the National Pension.

Public Pension reform has been one of the major issues in recent years in Japan because the sustainability of the system is a serious concern due to the very rapid ageing of the population, and financial balance of the national budget is unattainable without a sustainable public pension system. The normal pension age was increased from 60 to 65 years old in 1994 Reform and 2000 Reform. Pension reform in 2000 included a reduction of the benefit accrual factor of the earnings-related part of the EPI, aiming to contain the expenditure of public pensions in order to keep contribution levels acceptable to active generations (20 percent of annual earnings). Pension reform in 2004 decided to set a ceiling on the contribution rate of the EPI at 18.3 percent and reduce benefit expenditures through lower adjustment of pension benefit (called as macroeconomy indexation; Note 5) for the period of 2005-2023.

The contribution rate of the EPI would increase from 13.6 percent in 2002 to 23 percent in 2025 without further reform. According to the 2004 reform, the contribution rate to the EPI will be increased gradually but will be fixed at 18.3 percent in 2017 and afterwards, and pension benefits need to be lowered accordingly. However, it was explained by the Ministry that the model replacement rate (Note 2) would not fall below 50 percent when beneficiaries start receiving benefits at age 65. One way of controlling pension expenditure is to apply a lower benefit increase through "macroeconomy indexation" but there are concerns as to whether setting a ceiling on the contribution rate is compatible with the guarantee of the benefit level (Fukawa, 2004).

**Table 3. History of Public Pension reforms in Japan and Germany**

| Japan | | Germany | |
|---|---|---|---|
| | | 1957 | PAYG system<br>Dynamic pension（gross wage indexation） |
| 1961 | Introduction of National Pension | | |
| | | 1972 | Introduction of flexible retirement age (1973) |
| 1973 | Improvement of benefit level,<br>Introduction of CPI indexation | | |
| 1985 | Introduction of the Basic Pension (1986) | | |
| | | 1986 | Introduction of child credit |
| | | 1992 | Net wage indexation,<br>Benefit reduction for early retirement（2001） |
| 1994 | Gradual increase in normal pension age for the basic part of the EPI,<br>Net wage indexation,<br>Contribution from bonuses (1%) | | |
| | | 1997 | Extention of coverage（1999）<br>Expansion of child credit（1999） |
| 2000 | Gradual increase in normal pension age for the earnings related part of the EPI,<br>Price indexation (2000),<br>Reduction of accrual factor by 5 percent for the earnings related part of the EPI (2000)<br>Contribution based on annual earnings (2003). | | |
| | | 2001 | Benefit reduction in PAYG system,<br>Introduction of a tax-supported voluntary funded pension program (Riester Pension)<br>Introduction of minimum pension |
| 2004 | Upper ceiling for the EPI contribution (2017)<br>Macro-economy indexation (until 2023) | 2004 | Feasibility factor for benefit adjustment formula |

Note : Implementation year in parenthesis
Source : Fukawa (2003). Schmaehl (2000). Updated by the author.

**(2) Public pension reform in Germany**

The task of the public pension system (GRV) is to provide financial security against the cases of age- or disability-related unemployability. After the end of one's working life, old-age pensions replace wages to secure the retirement life and thus create the prerequisites for continued participation in social life (Sozialbericht 2005). The GRV offers comprehensive protection against reductions in earning capacity, age, and death (for surviving dependants).

The GRV faces great financial challenges: increasing number of pensioners due to longer lifespans have to be supported by decreasing number of contributors; higher labor costs make work more expensive; and recession has led to considerable losses in contributions within the GRV (Sozialbericht 2005). The German Government has reacted to those challenges by way of several steps of reforms. The financing basis has been actively extended, and the 2001 Reform invented a new formula to offset the reduction of public pension benefits through introducing a tax-supported private pension system (individual or occupational provisions) called a Riester Pension. The government has supported the setup of this system since 2002 through grants, fiscal benefits and partial waivers of social security contributions. The Riester Pension is supposed to play a more important role in old-age provisions in the future. A minimum guarantee benefit was introduced in early 2003 as tax-financed welfare provision to prevent hidden poverty for all those in need over the age of 65 or permanently disabled from the age of 18 (Sozialbericht 2005).

The pension-point value is updated annually in line with gross wages subject to an adjustment for increases in the contribution rate. The government aims to limit the contribution rate to 22 percent. The contributions rate is 19.5 percent as of 2006, and in the long run, the pension-point value will fall relative to real earnings according to the increase in contribution rate. A further change in rules was legislated in 2004. The "sustainability factor" will link the updating of the pension-point value to changes in the system dependency ratio: that is, the ratio of pensioners to contributors. There is no special tax relief for older people. The proportion of the income subject to tax varies with the age at which the individual first starts drawing the pension, and for retirement at age 65, only 27 percent of the pension is taxable (Sozialbericht 2005).

**(3) Sustainability of the German model**

It requires costs to offset the reduction of public pension benefits through private arrangements if tax revenues are used to promote such a scheme. The previous pension formula linked the development of net pensions to the development of average net earnings by adjusting the value of one earnings point. The new adjustment formula indexes the gross pension to average gross earnings minus the contribution rates of public pensions and a hypothetical contribution rate for the Riester pension. The development of the general net pension level (that is, net pension based on 45 pension-points divided by average net earnings of all insured) depends on how net earnings are defined. If contributions to the Riester pension are taken into account, the level is expected to decrease from 70 to 67 percent. If the previous definition without these contributions is used, however, the level decreases to about 64 percent (Viebrok, 2004).

The most important reform element is the introduction of a legal right to convert part of earnings to a personal account for all employees who are covered by the public pension scheme (Viebrok, 2004). Until 2001, the employer could decide independently whether to provide an occupational pension scheme or not. As of 2002, every employee can require the conversion of up to 4 percent of earnings (max: the contribution ceiling of the public pension scheme). The public defined benefit scheme is partially replaced by private defined contribution schemes, and those who had profited from redistributive elements in the past are likely to lose out from the reform. Given that the risk-adjusted real net rate of return is high enough, many members of younger cohorts are likely to gain from the reform (Viebrok, 2004).

If the given legislative framework of voluntary personal provision fails to achieve the goals of income distribution in old age, then the debate on obligatory personal provision is likely to start again (Viebrok, 2004). Subsidies do not appear to be high enough to encourage additional old-age provision for low earners on the one hand, while increasing the yields from tax allowances at higher earners is hard

to justify on the other hand (Viebrok, 2004). Establishing or at least improving "generational equity" has become a major concern of policy makers in Germany. Via changes in the adjustment formula, the replacement rate of the standard pension in Germany (45 earnings points) has been lowered from about 70 percent to 64 percent in 2030.

**4. Future direction of Japanese pension system**

On top of the quite serious aging of the population, intergenerational inequality is perceived as an important issue in Japan. It is necessary to make the system less vulnerable to economic and demographic changes to reduce the intergenerational inequality in the contribution-benefit relation due to the PAYG financing system. In order to establish a long-term stability of the public pension system, the obvious options are to increase the normal pension age, to improve the management of the assets held by the public pension funds to raise the rate of return, to change the post-retirement indexation of benefits, to reduce the rate at which pension benefits accrue, and to raise the share of the national subsidy. All of these options have been pursued in recent reforms in full or to some extent. What has not really been discussed yet in Japan are: (a) an increase in the normal pension age to beyond 65 years old; (b) a change of benefit structure (departure from flat-rate benefit, benefit accrual rate according to income level, etc.); and (c) adjustment of the system to the changing labor market. The sustainability of the Japanese pension system is discussed in this section from four mutually related different aspects: financing, benefit, interface of work and pension, and coordination between public and private arrangements.

**(1) Financing**

Recently in Germany, the paradigm has been shifted from a system where contributions have been adjusted to finance an agreed-upon level of benefits to a system where benefits will be adjusted so that a maximum contribution rate of 22 percent will not be exceeded until 2030 (Conrad and Fukawa, 2003). A similar paradigm shift has occurred in Japan. A driving force behind this shift is the concern about the long-term sustainability of the public pension system (Fukawa, 2005). Low expectations about future pension benefits together with a perception of intergenerational inequality in terms of lifetime contribution-benefit relations is leading to an increasing unwillingness to pay contributions to the public pension system in Japan.

The 2004 reform is expected to keep pension payments constant at around 9 percent of GDP through the end of the decade by allowing the replacement rate to fall from 59 to 50 percent, and any slippage from this spending target should be met by a hike in the pension eligibility age, rather than by a further rise in the contribution rate (OECD, 2006b). Generational equity is also a big concern in Japan. There are several ways to improve the contribution-benefit relation. The Japanese Government has chosen the way of adjusting benefit more slowly through "macroeconomy indexation" and placing a ceiling on the contribution rate, although the contribution rate to the EPI will increase from the present level of 14.6 percent to 18.3 percent over about 10 years. Macroeconomy indexation is a kind of automatic balancing mechanism, but this measure is employed to reduce the pension benefit level for a certain period of time and not permanently (Fukawa, 2005). A rising contribution rate risks further boosting the evasion rate, which is 33 percent for the NP and about 30 percent of workplaces for the EPI. Previous earnings will be revalued in line with total net wages of all insured, instead of the present average net wage increase, and benefits after retirement will be adjusted to be slightly less than price increases, in order to take the reduction of the working population into consideration. However, it would be more transparent to reduce the accrual rate directly, keeping the price indexation as it is (Fukawa, 2004).

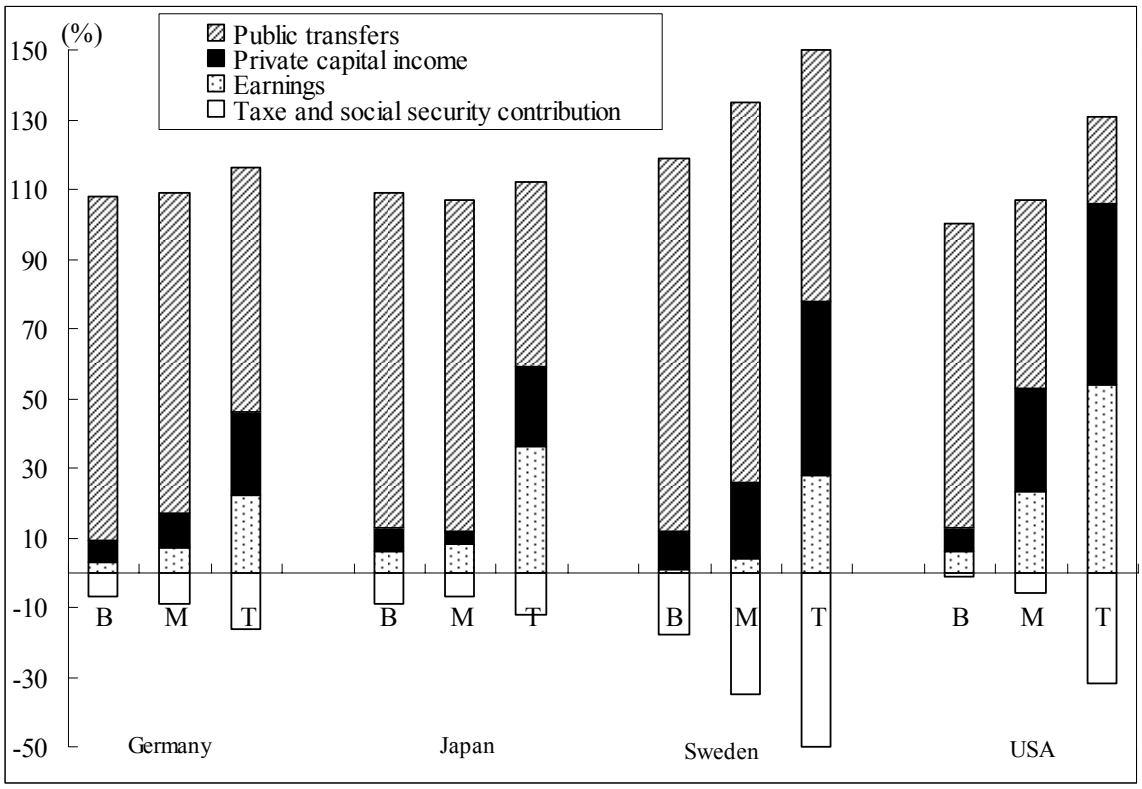
**(2) Benefit**

The following functions are built into the public pension systems in Japan and Germany: avoidance of sex discrimination although females have a longer life expectancy; and income redistribution based on lifetime earnings in order to secure a lifetime standard of living. The social security system would become more sustainable if the labor force participation of women and the elderly were to increase and if the birth rate were to rise in Japan. To accomplish this, social policy should be more oriented towards helping families and reducing the cost to women of working and having families (OECD, 1997). In

Germany, child-rearing periods will result in higher future pension entitlements in order to improve old-age provisions for women. However in Japan, child-rearing is incompatible with career development and child-rearing periods are not favorably treated in the pension system.

Public pension benefits are important as retirement income in all developed countries, and they are especially dominant for the low-income elderly households. Fig. 2 shows the income composition of the elderly households aged 65 or over by income quintile in 4 countries. For each income group, equivalized household disposable (after-tax) income is shown as 100 percent. Fig. 2 clearly shows that public pension benefits are quite important for the majority of the elderly in Japan and Germany. Earnings are important for high-income elderly in both countries, but they are more important for Japanese elderly. Fig. 2 also suggests that the role of public pension benefits differs rather significantly country by country and according to income class. In Japan, for the bottom 80 percent of the elderly, public pension benefits provided more than 80 percent of total gross (pre-tax) income, and about 50 percent for the top 20 percent of the elderly (Fukawa, 2006). In Germany, the share of occupational/private pensions was lower than in the UK and the USA, and public pension benefits were dominant for most elderly households (Scharze and Frick, 1999).

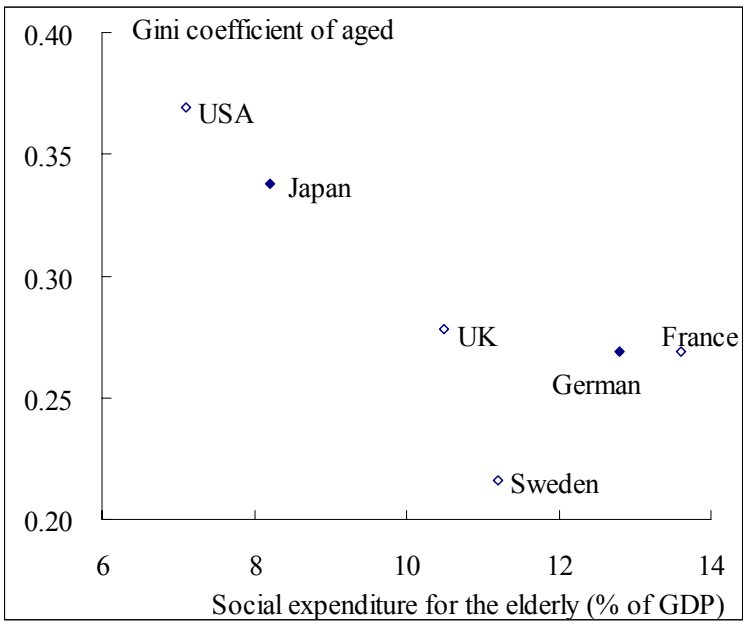
**Fig. 2 Income composition among the elderly (65+) by income groups: around 2000**




Note: Equivalized household disposable income is 100 percent for each income group.
B = bottom 20 %, M = middle 60 %, T = top 20 %
Source: Foerster and Mira d'Ercole (2005), Fukawa (2006)

Fig. 3 shows the relation between a) social expenditure for the elderly (public pension and other cash benefits for the elderly) as a percentage of GDP and b) the Gini coefficient of equivalized disposable income for the aged population. There is a clear tendency for the higher former, aged population to enjoy a more equal distribution of disposable income. It is important to note here that not only the size of social expenditure for the elderly but also the structure in terms of how it is distributed have a strong effect on the income distribution of the aged population.

**Fig. 3 Social expenditure for the elderly (% of GDP) vs. Gini coefficient of equivalized disposable income for aged population**




Source：Table 1

There is a flat-rate benefit part in the EPI, which is one of the major differences between Japan and Germany. The Basic Pension is progressive in terms of benefits, but it is quite regressive in terms of contribution. The share of the BP part is 30.7 percent of the total EPI benefits in 2004, but the share is expected to increase because future benefits cuts may be focused on the earnings-related part, although macroeconomy indexation applies to the entire benefit. The BP benefit has a strong effect on income distribution, but if the flat-rate benefit part is too large, it has a negative effect on work incentives. Dependent spouses of employees are entitled to the BP benefit without paying contributions, leading to views that the system is favoring single-income families. It is interesting to note that in this regard dependent spouses are entitled to 50 percent of old-age benefits of the insured in the US, and there are no benefits for them in the German system (Fukawa, 2004).

**(3) Interface of work and pension**

Reform discussions should take into account the consistency of pension programs with work incentives. In order to cope with the aging of the population, it is necessary to mitigate the strong pressure on social security through postponement of retirement (Fukawa, 2005). EU countries are trying to alter the paradigm from early retirement to later retirement. The public pension benefits are so dominant in the retirement income in Germany that more radical reform would be quite difficult. Nevertheless, the issue of increasing the normal pension age from 65 to 67 has already been decided in Germany. In view of the longer life expectancy, the increase in the normal pension age is a natural and realistic option in many countries (Note 6).

It is especially desirable for the Japanese public pension system to be as neutral as possible against very rapid ageing of the population. Working longer is an obvious solution, and tax and social security policies that discourage women and the elderly from working should be revised as soon as possible. Removing disincentives for female labor force participation would be more effective in limiting the falling proportion of workers in the total population. While the relatively low participation rate of prime-age women reflects a number of private-sector practices, such as seniority-based wages, the government should reduce or eliminate aspects of the tax and social security system that discourage women from working full-time. In addition, it is essential to increase the availability of childcare facilities and to encourage the take-up of parental leave and the creation of more family-friendly workplaces.

The proportion of non-regular workers has risen from 19 percent of employees a decade ago to over 30 percent, and part-time workers earn on average

only 40 percent as much per hour as full-time workers in Japan, a gap which appears too large to be explained by productivity differences (OECD, 2006b). While population ageing is partly responsible for the rise in measured inequality, increased dualism in the labor market is another important factor. The growing use of non-regular workers should be reversed by a comprehensive approach, including reducing employment protection for regular workers (OECD, 2006b).

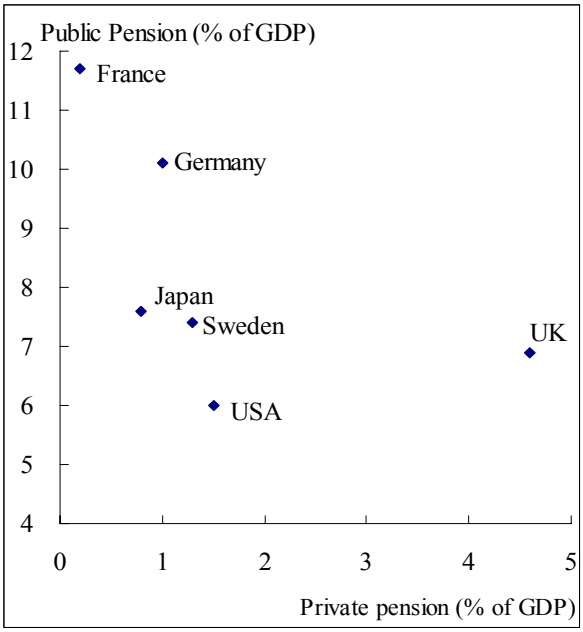
In order to improve the equity of the system, it is important to avoid different treatment for different income sources, and it is indispensable to coordinate pension policy with other policies such as tax, employment, and family policy. The issue of an earnings test is related to providing incentives for older persons to continue to work (Note 7), and the earnings test has been problematic in Japan for years (Seike, 2003).

**(4) Coordination between public and private arrangements**

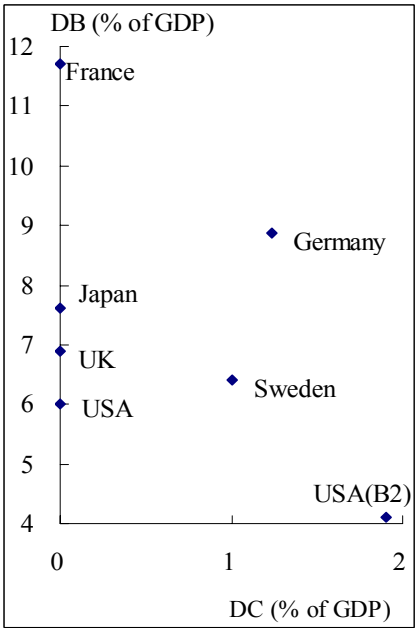
People need to continue their accustomed standard of living after retirement. It will be realized through a mixture of public and private arrangements. The public pension benefits are dominant in France and Germany, but almost the same level is attained through public and private mixture in the UK (Fig. 4a). It is not an option in most developed countries to increase the contribution rate of the public pension system, and solutions in private arrangements are inevitably sought. Along this line, a personal retirement account approach has been introduced or discussed in Germany, Sweden and the United States. The latest German pension reform measures highlight a shift in strategy with regard to the evolving public-private pension mix, and the core reform element is the partial substitution of public pensions by personal and corporate pension provisions (Fukawa, 2004). Fig. 4b shows defined benefit (DB) and defined contribution (DC) components, both as percent of GDP, of public Old-age and Survivors' Pensions including related schemes. The DC proportion is calculated based on the sum of the effective contribution rate of DB and the contribution rate of DC. Fig. 4b suggests that the share of such an approach is around 10 to 30 percent of the total public pension contribution including related schemes.

**Fig. 4 Old-age and survivors pension as percent of GDP**

(a) Private (corporate and individual) pension vs. Public pension




(b) Defined Benefit (DB) and Defind Contribution (DC) conponents of public old age and survivors pensions including related schemes




Note: DC proportion is calculated as follows.
Germany: 20 / 0.7 = 28.6 4 / (4+28.6) = 12.3%
Sweden: 2.5 / (2.5+16.0) = 13.5%
USA (B2) = Bush Commission Report, Model 2: 4 / 12.4 = 32 %
Source：Table 1

It is hoped that the reduction in public pensions will be compensated by an increase in corporate or individual provisions, and corporate pension reforms in 2001 and 2002 increased the options of Japanese companies to restructure their pension systems (Fukawa, 2004). However, the current tax environment in Japan does not exactly favor such additional pension provisions, and lower-income earners who work predominately in smaller and middle-sized companies cannot easily compensate the reductions in public pension by additional private provisions (Conrad and Fukawa, 2003).

**5. Concluding remarks**

The most important factors for the sustainability of the public pension system are fairness of the system and public trust in the system (Fukawa, 2004). As Schmähl (2002a) emphasizes, the public pension system, a long-term social institution, should be supported by most of the population. Therefore, a broad national consensus is necessary on how to redefine the public pension system and how to make the system less vulnerable to economic and demographic changes. It is important to provide meaningful benefits to the elderly within an affordable level of contribution for the working population (Fukawa, 2004). Fairness of the system is a prerequisite for public trust in the system, and it is clearly useful to treat employees and the self-employed equally. Intergenerational equity is an important factor for the public pension system, and it is often used for this purpose to fix contribution rates for years to come (Fukawa, 2004). There is a wide range of support for making public pension benefits related to contributions, although not necessarily in direct proportion. The main function of public pension systems in Japan and Germany is to cope with the loss of earnings after retirement, and there is a broad consensus in these countries that public pension has an income-smoothing function.

There is a growing recognition that pension programs need to be flexible to changes in labor market, lifestyle, and demography. The public pension system needs to be neutral from individuals' decisions about their life courses. Under the ageing of the population, a paradigm shift from "contribution follows benefit" to "benefit follows contribution" is inevitable to avoid excessive intergenerational inequality. However, it is not fair that certain generations, old or young, bear all the risks. Certainly, one way to restrict the role of the government is to provide minimum benefits: however it is also true that countries where public pensions provide only minimum benefits have sooner or later been obliged to create some kind of system to provide income-related benefits (Schmähl, 2002a). Many claim that the so-called crisis of the welfare state is due to the fact that there has been too much emphasis on equity,…. the question of the most equitable as well as the most efficient option - or if this is not possible: the best possible mix of the two – might very well be one to which the answer does not exist (Westerveld, 1998). In considering a new approach, it is worth keeping in mind that cutting social expenditures will not necessarily lead to a reduction in the total resources which a society devotes to such ends, though it will change the distribution of the burden (OECD, 1997).

From a comparative study between Japan and Germany, we have derived some implications for the sustainable development of public pension systems. In order to make the public pension system as neutral as possible against economic fluctuations and demographic changes, it is natural to add pre-funding elements in the PAYG system. Introduction of personal retirement account is also useful to mitigate intergenerational inequality and gain consent to reduce PAYG benefits from the younger generation. It is important in Germany to reduce the unemployment rate and to control subsidies for the Riester pension in order to increase the sustainability of the public pension system.

The upper ceiling of earnings subject to contribution needs to be reconsidered, because it has some distributional implications. The nominal ceiling of the contribution rate (18.3 percent for EPI and 22 percent in Germany) should be viewed together with corresponding benefits when comparing with other countries. A normal pension age of 67 in Germany is equivalent to that of 70 in Japan. Increasing the normal pension age to 65 will be completed in March 2013 for the BP and in March 2025 for the EPI (earnings-related part) in Japan. Although an equal treatment of regular and non-regular workers is quite urgent and serious matter, faster implementation or a further increase in the normal pension age

is clearly an option in Japan. There is still some room to reduce benefits for the high-income elderly: therefore it is rational to change the benefit accrual rate according to income level as does OASDI in the US. It is used in both countries to apply a lower benefit adjustment rate as a benefit control tool, because this method is politically more acceptable. However, it is much more transparent to reduce the benefit accrual rate and keep price adjustment.

The following is some concrete measures to be addressed to increase the reliability of the Japanese public pension system:

- To define the kind and scope of benefits to be covered by tax revenue;
- To make the system neutral from occupation; and
- To design both contributions and benefits as earnings-related (namely, eliminate flat-rate contributions/benefits) and save expenditure through a lower replacement rate for higher income.

Once the sustainability of the system has been improved, consistence of the system and its neutrality to individuals' life-course will become the most prominent issues.

**Notes**

(Note 1) Participation in the Basic Pension is mandatory for all residents between the ages of 20 and 60, and monthly contribution per participant is a flat rate of 13.6 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 has been 66,000 yen per month per person. The second-tier contribution includes the premium of the first-tier for both employees and dependent spouses of employees.

(Note 2) Model pension refers to the Old-age Pension benefit for those male employees with a dependent spouse, who earned average earnings for 40 years. The model replacement rate is the proportion of model pension to the average net earnings of male employees.

(Note 3) Employee pays 7.0 percent of earnings with an upper ceiling and employer pays 10.21 percent of earnings without an upper ceiling. The total contribution rate of 17.21 percent is equivalent to 18.5 percent of pensionable earnings (18.5 = 17.21 / (1 – 0.07)).

(Note 4) The benefit accrual factor for the earnings-related part was 0.7125 percent of earnings without bonuses per year of contribution until March 2003, but it is 0.548 percent of annual earnings 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.

(Note 5) If we denote total net wage increase minus average net wage increase as d, pension benefits will be increased each year in line with price increase minus d, instead of the present price increase.

(Note 6) It was decided to raise the normal pension age from 65 to 67 years in the 1983 Reform, and actual implementation has begun since 2003 in the US. In Sweden, there is no normal pension age, and it is completely up to an individual when to start receiving public pension after 61 years of age.

(Note 7) The impact of the earnings test in the US will be relatively small in the future, since the earnings test only applies to beneficiaries below the normal retirement age, and for these persons the delayed benefit credit increases future benefits by an actuarially fair amount (Clark, 2003).

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