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**POSSIBLE EFFECTS OF AGEING
ON THE EQUILIBRIUM OF THE PUBLIC PENSION
SYSTEM IN JAPAN**

By

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Possible effects of ageing on the equilibrium of the public pension system in Japan

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Contents

Summary	163
1. The overall pension system in Japan	163
1.1. The present set-up	163
1.1.1. Public pensions	163
1.1.2. The 1994 reform of public pensions	168
1.1.3. Occupational pensions	173
1.1.4. Individual pensions	174
1.2. Current financial performance	175
2. Effects of demographic changes on public finance	176
2.1. Demographic projections	176
2.2. Short and long-term financial performance	177
2.2.1 Official projections	177
2.2.2 Projections under alternative assumptions	184
2.3 Impact of social security on public finance	186
3. Appraisal of the 1994 reform and future policy options	187
3.1. Appraisal of the 1994 reform	187
3.2. Policy options	189
3.3. Final remarks	193
References	194

Tables

1. Class of coverage for public pensions in Japan	164
2. Flat-rate basic benefits for early and delayed retirement	165
3. Public pension benefits deduction for an individual in the 1994 income tax provisions	167
4. Maximum deductible benefits of public pensions per annum combined for a couple in 1994	167
5. Start of full basic benefits for male employees	170
6. Long-term changes in the total population of Japan	176
7. Age distribution of population	179
8. Population ageing in the first-tier system	180
9. Population ageing in the KNH	180
10. Long-term financial performance of the KNH (after the diet approval on 2 November 1994)	183
11. Net income of actively working generations	188
12. Projections in funded reserves — I	189
13. Projections in funded reserves — II	190
14. Social security wealth for couples with one male earner in the KNH	190
15. Projections of aggregate social security benefits/contributions and subsidies from general revenue as a percentage of national income	192

Graphs

1. Two-tier benefit system of Japan	163
2a. Earnings test in the KNH: the previous system	165
2b. Earnings test in the KNH: from April 1995	166
3. Raising the normal commencement age	169
4. Balance of net income between active and retired workers	171
5. Old-age employment benefits	172
6. Wages and benefits for employees in their early 60s in Japan	172
7. Contributors/old-age beneficiaries ratio in the KNH	174
8. Benefits/income ratio in current account of the KNH	175
9. Reserve/annual aggregate benefits ratio in the KNH	176
10. Total population in Japan	178
11. Population projections of the elderly (age 65 or over) as a percentage of total population	178
12. Contribution rates of the KNH: official projections	181
13. Monthly contributions for Class 1 enrollees in the KNH	182
14. Growth of aggregate basic benefits	182
15. Growth of aggregate benefits of the KNH	183
16. Contribution rates of the KNH: pessimistic demographic assumptions	184
17. Contribution rates of the KNH: zero real growth of gross monthly earnings	185
18. Contribution rates of the KNH: another net indexation case	185
19. Contribution rates of the KNH: on the total earnings base	186
20. Contribution rates of the KNH: with one-half government subsidy	187
21. Growth of active employees	193

Summary

This paper describes the present set-up of the overall pension system in Japan, presents short and long-term financial projections under alternative demographic and economic assumptions, and discusses policy options with an appraisal of the 1994 pension reform. The main points highlighted in the text are the following:

- (i) Japan currently has six public pension programmes covering different sectors of the population. The six programmes are similar, and operate largely on a pay-as-you-go basis.
- (ii) Legislation enacted in 1985 introduced substantial changes in these programmes. The 1985 reform underlies the present set-up.
- (iii) Japan currently has a two-tier benefit system. The flat-rate basic benefits cover all residents aged 20 to 60. The full old-age basic benefits are payable from age 65 after 40 years of contributions. The accrual rate for the earnings-related component of old-age benefits is 0.75% per year.
- (iv) In principle, payments of benefits begin at the age of 65, but employees are allowed to receive 'special old-age benefits' corresponding to the full amounts on both tiers starting from age 60. An earning test is applied to those in their early 60s.
- (v) At present, the old-age benefits for the newly awarded 'model' retired person (with his dependent spouse) in the private sector replaces 68% of average monthly gross earnings of currently active male workers (80% of average net earnings). Its replacement rate is about 50% of the average annual earnings (which also includes bonuses).
- (vi) Equal percentage contributions are required of employees and their employers. The total percentage is currently 16.5% for workers in the private sector. It was 3.0% in 1948 and has been gradually increased. It is expected to rise by 2.5% every five years. No contributions had been paid from semi-annual bonuses until 31 March 1995.
- (vii) The government covers one third of the total cost of the flat-rate basic benefits.
- (viii) A second pension reform was introduced in 1994. Among other changes, indexation of pension to the dynamics of net wages replaced gross wage indexation. Basic old-age benefits for employees in their early 60s were to be phased out in stages (by 2013 for men). However, the 1994 legislation guarantees that the full amount of second tier's

special old-age benefits for retired employees will still be paid from age 60. The contribution rate was increased from 14.5 to 16.5% from November 1994, and a 1% rate of contribution from bonuses has been levied since April 1995.

- (ix) The aggregate public pension benefits amounted to 5.7% of GDP in 1991, while 24% of benefits were financed by the subsidy from general revenue in the same year.
- (x) The total population in Japan will peak out in 10 years, and probably then begin to fall sharply, reaching half the current number in 100 years. The proportion of the elderly (65+) will be one third in 50 years.
- (xi) The declining total fertility rate (1.50 in 1994) together with a slower growth of the Japanese economy will impose greater stresses on pay-as-you-go public pension financing. According to the latest official projections, the contribution rate has to be raised step by step to near 30%, almost double the current level, in 30 years, in order to support currently legislated benefits. The projected maximum rate will vary between 27 and 37%, depending on alternative demographic and economic assumptions. Consequently the total amount of subsidy to social security (pension, health care, unemployment and other welfare services), which was 4.8% of national income in 1993, will also double the current level in 2025.

The main policy-oriented conclusions are:

- (a) Net indexation, introduced by the 1994 reform can contribute substantially to reducing public pension benefits. The standard replacement rate will fall by about 20% in 35 years.
- (b) In spite of the increase in normal retirement age, the labour market participation rate for those in their early 60s will not be much different from the current one. Rather, the increase will be effective in cutting down the amount of pension benefits for those retiring before 65.
- (c) The 2 percentage point increase in the contribution rate in November 1994 was unnecessary. Rather it should have been raised gradually each year, say, by 0.5 percentage points.
- (d) There is no economic rationale for leaving bonuses almost entirely outside the system.
- (e) Japanese public finances will record large imbalances in the future unless each item of public expenditure is

severely cut down. Further reductions of public pension benefits are inevitable.

- (f) Continued economic growth will mitigate the financial difficulties. Partial funding shift from contributions to consumption-based taxes should be implemented. Promoting later retirement, encouraging female labour force participation, and greater support to both childbirth and the raising of children are also worth recommending.

- (g) Proposals for switching from pay-as-you-go to funded programmes in public pensions are likely to be turned down in Japan. Rather, further reduction in current generous benefit levels of public pensions while giving greater incentives to funded private pensions will follow suit.

- (h) In 1985 and 1994 Japan deleted a part of the earned entitlements of public pensions. This flexible approach to the problems of ageing will allow Japan to solve its future financial problems.

1. The overall pension system in Japan

This chapter describes the present set-up of the Japanese pension system. Public pensions, occupational pensions and individual pensions are each treated separately. The 1994 reform bill of public pensions is also examined. Second, the current financial performance of public pensions is outlined.

1.1. The present set-up

1.1.1. Public pensions

Japan currently has six public pension programmes covering different sectors of the population. The earliest plan was established in 1890; the most recent, in 1961. All programmes had been managed independently until April 1986. There had been no revenue sharing among them.

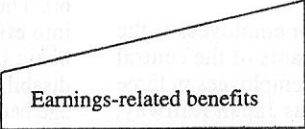
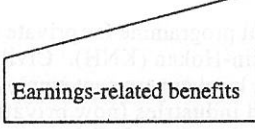
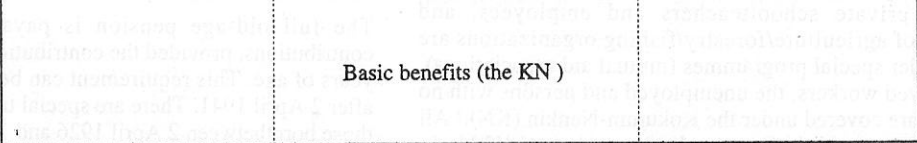
Initially earnings-related benefits were provided only to wage and salary earners. The two-tier benefit system (flat-rate basic benefits + earnings-related benefits) was introduced in 1954 for employees in the private sector. Civil servants became eligible for two-tier benefits from 1974. In the early stages, the public pension benefits were low for private sector employees, while

they were considerably higher for those in the public sector. 'Gap-decreasing' in benefit levels between private and public sector employees became popular, inducing *ad hoc* increases in benefit levels for the private sector employees in the age of high-speed economic growth. The 1973 increase was especially remarkable, since the typical replacement rate was lifted to 60% of average monthly earnings. In 1973, benefit indexation was introduced together with a revaluation of past earnings.

Owing to rapid economic growth in the 1960s, urbanization took place, inducing a rapid decline in the absolute number of self-employed. The pension scheme for these workers faced large deficits. A revenue-sharing scheme became necessary. The onset of slower economic growth in the mid 1970s forced a scaling down of the Japanese public pension programme.

Legislation enacted in 1985 introduced substantial changes in the country's entire old-age, disability and survivors' benefits under the social security system. The present system is based on the 1985 reform. Under the new system, which became effective on 1 April 1986, all sectors of the population receive a common, basic minimum benefit. The other five systems for employees provide supplementary payments according to contributions. Although each system has its own contribution and benefit structure, they are similar, operating largely like pay-as-you-go systems.

GRAPH 1: Two-tier benefit system of Japan

		
		
Independent workers, self-employed and jobless persons (the KN)	Employees in the private sector and their dependent spouses (the KNH)	Civil servants / other employees and their dependent spouses (four special programmes)

Note: KNH = Kosei-Nenkin-Hoken.
KN = Kokumin-Nenkin.

Table 1

Class of coverage for public pensions in Japan

Class	Coverage	Contributions	Old-age benefits
1.	Those not in Class 2 or 3 between ages 20 to 60. Students and those with no occupations covered	Flat amount of Yen 11 700 per month in fiscal year 1995	Basic benefit (from the KN) from age 65
2.	All public- and private-sector employees	Earnings related, shared 50/50 by employers and employees	(i) Between ages 60 to 65: Both flat-rate and earnings-related benefits paid from the KNH and other employees' pension programmes. After fiscal year 2001, the flat-rate portion is to be gradually phased out. (ii) After age 65: The earnings-related portion continues to be paid by the KNH and other employees' programmes, while basic benefits are paid from the KN.
3.	Dependent spouses of Class 2 employees between ages 20 to 60 (mostly housewives)	No contributions. Benefits are assured by Class 2 contributions	Basic benefits (from the KN) from age 65.

The two-tier benefit system and coverage

Japan currently has a two-tier system of public pensions; the flat-rate basic benefits and the earnings-related benefits (see Graph 1). The first tier covers all residents including self-employed and jobless persons. The second tier applies only to employees.

The principal programme for private sector employees is the Kosei-Nenkin-Hoken (KNH).¹ Civil servants of the central government, local government employees, employees in three nationalized industries (now privatized as Japan Railway, Nippon Telephone and Telecommunications and Japan Tobacco), private schoolteachers and employees, and employees of agriculture/forestry/fishing organizations are covered under special programmes (mutual aid associations). Self-employed workers, the unemployed and persons with no occupation are covered under the Kokumin-Nenkin (KN).² All residents are categorized into three classes, as shown in Table 1.

Under the current system, dependent wives of men covered by the KNH are entitled to their own pensions without making individual contributions. A dependent wife's flat-rate basic pension will be covered through her husband's contributions to

the KNH. Since the dependent wife will receive the pension in her own name upon reaching old age, she will not lose it even if she divorces her husband.³

Basic benefits

The flat-rate basic benefits cover all residents aged from 20 to 60. They date from 1 April 1961, when the KN was first put into effect. The KN provides the flat-rate basic benefits. The basic benefits include not only old-age pensions but also disability and survivors' pensions. This paper will focus on old-age benefits.

The full old-age pension is payable after 40 years of contributions, provided the contributions were made before 60 years of age. This requirement can be met only by those born after 2 April 1941. There are special transitional provisions for those born between 2 April 1926 and 1 April 1941 with at least 25 years of coverage. They can receive the maximum pension even with fewer contribution years, provided they have contributed since April 1961.

The maximum monthly pension of YEN 50 000 at 1984 prices (for a person with maximum years of coverage) is payable from

¹ The KNH is often called 'employees pension insurance' in English.

² The KN is often called 'national pension' in English.

³ The same statements in this paragraph hold true for dependent husbands.

Table 2**Flat-rate basic benefits for early and delayed retirement**

Age at initial claim	Proportion to the normal benefits (%)
60	58
61	65
62	72
63	80
64	89
65	100
66	112
67	126
68	143
69	164
70	188

age 65. The benefit is indexed automatically each fiscal year (from 1 April) to reflect changes in the consumer price index of the previous calendar year. The current maximum basic benefit for 1994 fiscal year is YEN 65 000 per month.¹

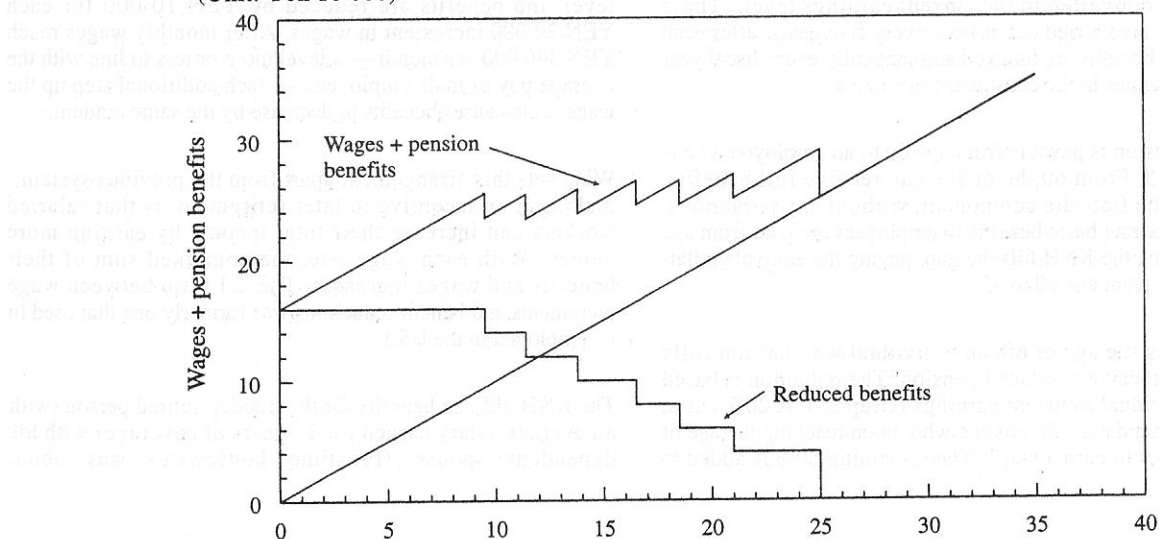
¹ YEN 10 000 = USD 96.9 = UKL 62.4 = DM 138.7 = FF 474.0 = ECU75.7 as at 29 December 1995.

The pension may be claimed at any age between 60 and 70. It is subject to actuarial reduction if claimed before age 65 or an actuarial increase if claimed after 65. The reductions and increases are shown in Table 2. Currently, the reduced basic benefits before age 65 are provided only for class 1 enrollees by the KN, whereas from age 60 the equivalent, full flat-rate benefits along with earnings-related benefits can be claimed without any reductions by employees through the KNH.

Earnings-related benefits

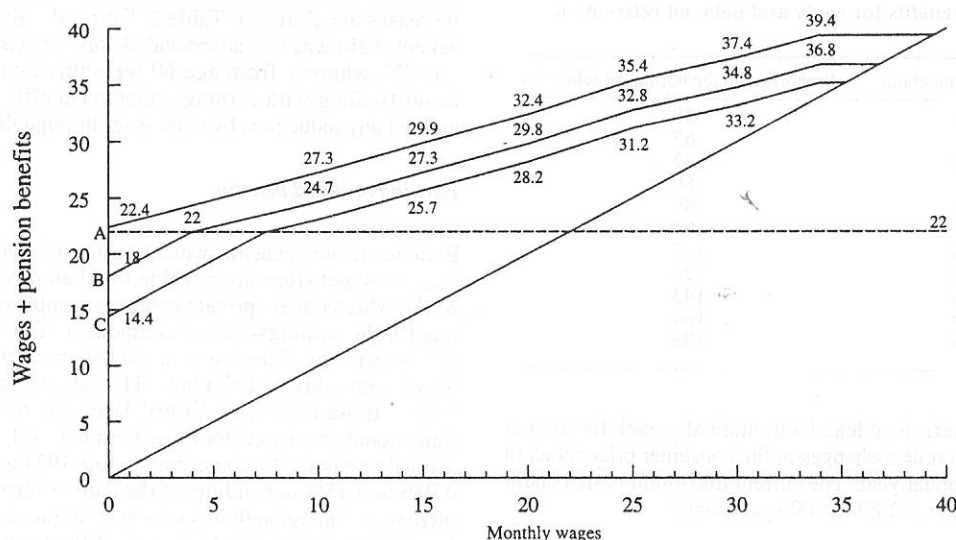
Earnings-related benefits, which include old-age, disability, and survivors' pensions are payable to all employees. Under the KNH, which covers private enterprise employees, the accrual rate for the earnings-related component of old-age benefits is 0.75% per year. Thus, 40-year contributions will earn 30% of average monthly real earnings. This accrual rate is applicable only to those born after 2 April 1946. There are also special transitional provisions for those born before 1 April 1946. The accrual rate is 1% for those born before 1927 and it varies from 0.986 to 0.75% depending on the date of birth for those born thereafter. The reductions in the accrual rate correspond to the longer average contributing years of the younger cohorts. On average, each cohort is expected to receive 30% of his career average monthly real earnings, as the earnings-related component.

GRAPH 2a: Earnings test in the KNH: the previous system
(Unit: Yen 10 000)



Note: YEN 200 000 is assumed to be the full amount of benefits.

GRAPH 2b: Earnings test in the KNH: from April 1995
(Unit: Yen 10 000)



Note: A, B and C indicate actual pension benefits under the proposed earnings test in cases of YEN 280 000, YEN 220 000 and YEN 180 000 as the full amount of pension benefits.

The career average monthly earnings are calculated over the employee's entire period of coverage, adjusted by a wage index factor, and converted to the current earnings level.¹ These conversions are carried out at least every five years; after each conversion, benefits are indexed automatically every fiscal year to reflect changes in the consumer price index.

The full pension is payable from age 60 to an employee who is fully retired. From 60, he or she can receive full benefits, including the flat-rate component, without any reductions. Since the flat-rate basic benefits to employees are paid from age 65 by the KN, the KNH fills the gap, paying the equivalent flat-rate benefits from age 60 to 65.

On reaching the age of 60, an individual who has not fully retired can receive a reduced pension. The reduction is based on the individual's current earnings (Graph 2). A 20% cut in benefits is mandatory for anyone who, upon reaching the age of 60, continues to earn a wage. The remaining 80% is added to

the worker's monthly pay. If the total is under YEN 220 000, the worker receives all these benefits. If the total exceeds that level, the benefits are reduced by YEN 10 000 for each YEN 20 000 increment in wages. After monthly wages reach YEN 340 000 per month — a level more or less in line with the average pay of male employees — each additional step up the wage scale causes benefits to decrease by the same amount.²

What sets this arrangement apart from the previous system,³ making it an incentive to later retirement, is that salaried workers can increase their total income by earning more money. With each wage rise, the combined sum of their benefits and wages increases. The 2:1 ratio between wage increments and benefit reductions was formerly one that used to be employed in the USA.

The KNH old-age benefits for the 'model' retired person (with an average salary earned for 37 years of coverage) with his dependent spouse (full-time housewife) was about

¹ For example, the April 1960 monthly earnings level of YEN 30 000 in nominal terms was converted to YEN 348 000 in 1989, and to YEN 404 000 in 1994.

² Over YEN 340 000, the new earnings test is equivalent to a 100% tax cut.

³ The earnings test has changed from April 1995. The previous system is described in Graph 2.

YEN 231 000 per month in 1994, replacing 68% of average gross monthly earnings of currently active male workers (or 80% of average net earnings).¹

In Japan, employees usually receive semi-annual bonuses which typically amount to four or five months' salary, although in small companies they are often much smaller. Since these bonuses are not included in the earnings' base for either public pension contributions or benefits, the replacement rate for the abovementioned 'model' retired person will be considerably lower, about 50% of the average annual earnings.²

An employer with 500 or more employees and multi-employers in the same line of business with a total of 3 000 or more

employees in the private sector may contract out the earnings-related portion of the KNH by setting up a private fund, Kosei-Nenkin-Kikin (KNK),³ on a fully funded basis. For contracting out, at least 30% higher benefits must be provided through the KNK. Only the non-indexed part of the pension can be contracted out; the additions due to revaluations of past earnings or due to later CPI indexing will be paid by the KNH.⁴ An employer who contracts out must still contribute to the KNH at the reduced rate.⁵

In principle, public pension benefits are taxed. In fact, however, they have been little taxed, mainly for political reasons.

³ The KNK is often called 'employees' pension funds' in English.

⁴ The non-indexed earnings-related part of the KNH contracted out by the KNK is calculated on a fully funded basis. The part is a defined benefit plan, the accrual rate of which is 0.75% per year, in principle; 5.5% nominal rate of return per annum is assumed. About 57% of the aggregate KNK reserves were estimated to be the contracted-out portion in 1991.

⁵ As of June 1994, there were 1,868 KNKs covering about 12.3 million employees, 38% of the covered people in the KNH.

Table 3

Public pension benefits deduction for an individual in the 1994 income tax provisions

(10 000 YEN)

Age	Annual benefits of public pensions (B)	Deductions
65 and over	Less than 260	140
	260 to 460	Bx 0.25 + 75
	460 to 820	Bx 0.15 + 121
	820 and over	Bx 0.05 + 203
Under 65	Less than 120	60
	120 to 400	Bx 0.25 + 37.5
	400 to 760	Bx 0.15 + 78.5
	760 and over	Bx 0.05 + 155.5

Table 4

Maximum deductible benefits of public pensions per annum combined for a couple in 1994

Age		Annual public pension benefits for spouse (10 000 YEN)		
		0	1 to 175 (105)	More than 175 (105)
H<65	S<65	190	248.3	210
H≥65	S<65	306.7	365	330
H≥65	65≤S<70	306.7	435	450
H≥65	S≥70	320	448.3	450

Notes: 1. H = householder; S = spouse.

2. A couple is assumed to have no income other than public pension benefits.

3. Basic deductions of dependent spouse are given only if annual benefits for her amount to no more than YEN 1 750 000 (or YEN 1 050 000) when her age is 65 or over (or less than 65).

Currently very generous income tax provisions are provided for public pension benefits, such as the public pension benefits deduction (Table 3). For example, a pensioner couple can be exempted from tax payments, even if they are receiving a combined public pension benefit of YEN 4.5 million per annum, as long as the householder is aged 65 or over (see Table 4).¹

Contributions

Under the KNH, equal percentage contributions are required of employees and their employers. The contributions are based on the Hyojun-Hoshyu-Getsugaku (HHG), the monthly standard earnings, graded into 30 levels, currently ranging from YEN 92 000 to YEN 590 000 per month. The total percentage in effect since November 1994 is 16.5%.² A reduced rate of 13.0% is applied if partially contracted out. The total percentage will increase to 17.35% from October 1996, and the rebate for those contracted out will range from 3.2 to 3.8% from April 1996.

The contribution rate of the KNH was initially set at 6.4% in 1942 and in 1944 was raised to 11.0%; it was reduced to 3.0% in 1948. The relatively low 1948 rate has been gradually increased, and the current contribution rate is expected to rise by 2.5% every five years, to reach 29.8% in 2025. It should be noted that future increases in contribution rates have not yet become law.

The HHG includes wages, salaries, allowances, and all other cash income paid to an employee for services rendered, but excludes the traditional semi-annual bonuses. The HHG is also used as the earnings base for calculating benefits.

Class 1 persons aged between 20 and 60 pay the flat-rate individual contributions to the KN. The current rate since April 1995 is YEN 11 700 per month. It is scheduled to rise each fiscal year by 500 plus the increase in the consumer price index from the previous calendar year. The projected maximum rate will be YEN 21 700 (at 1994 prices) from April 2015 on.

Exceptions are made for those who, for financial reasons, cannot pay.³ The flat-rate basic benefits for the period of exemption will be one third (equal to the government subsidy) of the normal amount.

Under the current system, dependent spouses of citizens enrolled in the KNH are automatically entitled to flat-rate basic benefits, and the spouse is not required to make any individual payments to the public pension system.

The total annual cost of the flat-rate basic benefits is shared by the KN, KNH and the other four special programmes on a fully pay-as-you-go basis. This cost sharing is in proportion to the number of persons covered, and in calculating each share, dependent spouses of employed persons in the KNH are also counted in the KNH coverage.

It should be noted that those covered by the KNH are not required to make individual contributions to the KN, while the KNH itself is responsible for the financial participation in the first-tier basic pensions. Through these indirect financial arrangements, those covered by the KNH are regarded as covered also by the KN.

Government subsidy, tax treatment, and management of funded reserves

The government covers one third of the total cost of the flat-rate basic benefits provided by the KN. There is no subsidy for the earnings-related part of the KNH. The government also pays administrative expenses.

Contributions of employers and employees are fully tax deductible, and the annual returns from the funded reserves of the KNH are tax-exempt.

The funded reserves of the KNH have been invested in social overhead capital for the construction of highways, railways, bridges, airports, public hospitals, and other public projects. They also provide housing loans.⁴

1.1.2. The 1994 reform of public pensions

Major changes in the public pension system have thus far been made roughly once every 10 years. Because the great overhaul was proposed in 1984, the chances were that 1994 would become another year of pension reform. Meanwhile the future demographic projections by the Japanese Government (Institute of Population Problems and Ministry of Health and Welfare) were updated twice in 1986 and again in 1992. Between 1985 and 1993, the total fertility rate showed an unexpected decline, whereas life expectancy increased steadily. These demographic

¹ See Appendix 4C of Takayama (1992).

² The contribution rate was 14.5% in October 1994.

³ In 1990, about 28% of independent workers, the self-employed and jobless dropped out of the basic level of protection, due to exemption (12%) or non-payment of contributions (16%). Future increases in flat-rate contributions will probably result in a much greater drop-out rate.

⁴ The funded reserve of the KNH is used under the fiscal investment and loan programme (FILP). See International Research Group — Institute of Fiscal and Monetary Policy — Ministry of Finance (1992), for more details.

changes imposed greater stresses on the public pension programme.¹

The biggest political issue in the Japanese pension system was when to start benefit payments. At that time, the pensionable age was 60. The government had proposed twice in 1979 and 1989 to raise the eligibility age for all workers to 65. The proposal was turned down by the Diet both times since trade unions and opposition parties were strongly opposed to the bill.

In summer 1993, the political situation changed dramatically. The Liberal Democratic Party, which had been ruling Japan since the end of the Second World War, fell from power. It was replaced by a coalition of opposition parties (excluding the Japanese Communist Party). This coalition prepared the 1994 legislation.

The labour alliance Rengo (Japan Trade Union Confederation), which serves as an umbrella organization for most of the

country's unions, announced a basic change in its stance in the spring of 1993, endorsing a switch to what is known as 'net indexation'. Labour's new stance brought it closer to management, permitting work to begin on a compromise plan acceptable to both sides. A project team was set up under the coalition government, and it came up with an answer on the age at which benefit payments should commence. Its final report was released on 20 December 1993. In March 1994 the Japanese Government submitted a bill to the National Diet to reform the system, and the bill was approved by the Diet on 2 November, 1994. The main contents of the reform bill are outlined below.²

Raising the normal commencement age for employees

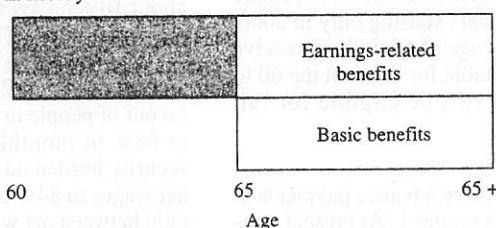
As noted, Japan has a two-tier system of basic benefits for everybody on tier 1 and earnings-related benefits for employees on tier 2. In principle benefit payments begin at the age of 65, but there is a legal provision allowing employees to receive 'special old-age benefits' corresponding to the full amounts on both tiers starting from age 60. The approved legislation

¹ The Government Actuary Report on the KN and the KNH is published every five years. The 1989 report indicated that the contribution rate of the KNH will be raised up to 31.5% from 2020 if the full amount of its old-age benefits is paid from age 60. The maximum rate of the KNH was further revised up to 34.8% in the 1994 provisional report.

² See Takayama (1995a) and Murakami (1995) for details.

GRAPH 3: Raising the normal commencement age

1. In fiscal year 2013



2. In fiscal year 2001

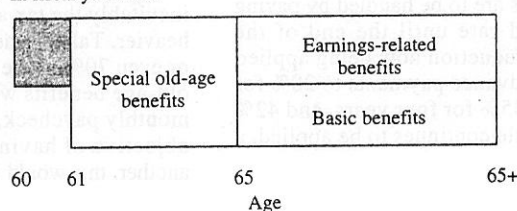


Table 5**Start of full basic benefits for male employees**

Date of birth	Age
Before 1 April 1941	60
Between 2 April 1941 and 1 April 1943	61
Between 2 April 1943 and 1 April 1945	62
Between 2 April 1945 and 1 April 1947	63
Between 2 April 1947 and 1 April 1949	64
After 2 April 1949	65

guarantees that the tier-2 benefits for retired employees between 60 and 64 will be paid without any reduction.

The tier-1 benefits for this age group are to be phased out by stages (between 2001 and 2013 for men), and eventually nobody under 65 will receive full basic benefits. In exchange, employees aged between 60 and 64 will become eligible for advance payments at a reduced rate from the basic benefit (Kiso Nenkin), a fixed-amount plan that ordinarily begins paying benefits at age 65, as is currently the case for non-employees.¹

Graph 3 shows the approved payout configuration for men both in 2001, the first year of their shift, and in 2013, at the shift's end. From 2001 to 2003 men will have to wait until they are aged 61 before they can receive full basic benefits. This will affect those males born between 2 April 1941, and 1 April 1943 (see Table 5). The phasing-out of basic benefits for female employees will be delayed by five years starting only in 2006. Eventually retired workers under the age of 65 will not receive any of the special benefits now available for those in the 60 to 64 age bracket, though they will still be eligible for full earnings-related benefits on tier 2.

Those in this age bracket can also receive advance payments at a reduced rate from the basic benefits on tier 1. At present non-salaried workers can already take advantage of this system, and at the start of the next century, salaried workers will gain the same right. The advance payments are to be handled by paying out basic benefits at a reduced rate until the end of the pensioner's life. The size of the reduction now being applied rises from 11% for one year of advance payments to 20% for two years, 28% for three years, 35% for four years, and 42% for five years. If the same schedule continues to be applied, a

man who begins receiving benefits in 2013 at the age of 60 will be entitled to 58% of full basic benefits. As some people feel that these rates of reduction are too steep, their appropriateness is to be reviewed in 2001 using the latest data on life expectancy. Meanwhile, a 60-year old retired wage earner will continue to receive earnings-related benefits without, in principle, any reduction in their amounts.

Switching benefit indexation from a gross- to a net-wage basis

The time has come to ensure a sound balance between the benefits received by pensioners and the contributions paid by active workers. Up to October 1994, benefits were adjusted in line with the rise in gross wages, but since then, they have been adjusted to net wages. In the long run, the switch will stabilize the balance between benefits and take-home pay.

In essence a public pension system lays down rules for dividing the economic pie between the aged and the working generation. The retired should be able to maintain their dignity, while workers should be adequately rewarded for their labours. It is the pension system that prescribes the rules for satisfying these two needs.

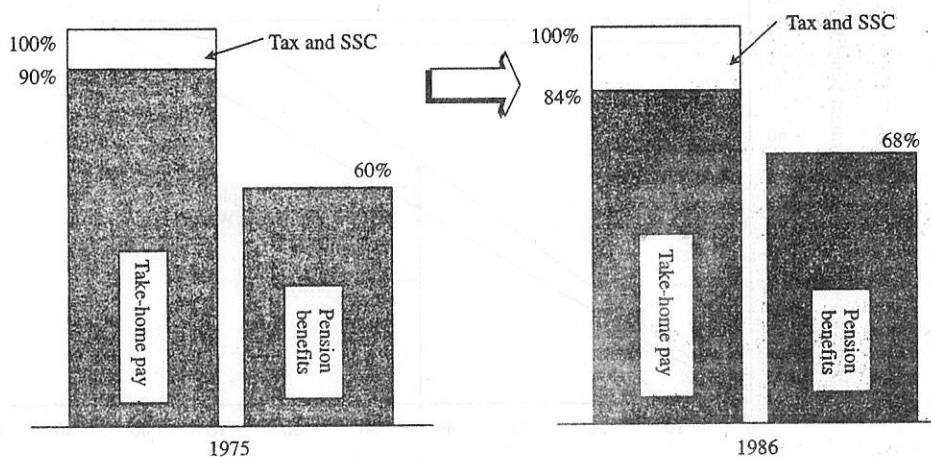
From this perspective, the old rules were unsatisfactory. They gave pensioners a gradually increasing portion of the national income. In the case of the KNH, around 1975 the standard benefits came to roughly 60% of active male workers' average monthly wages before taxes (see Graph 4). In those days national and local income taxes and social security contributions reduced wage earners' monthly paychecks by about 10% on average, while the same burden on the retired was quite light. Thus, while the ratio of monthly wages to benefits was 100% to 60%, or 5:3, before taxes, it narrowed to 90% to 60%, or 3:2, after taxes. Thereafter this balance tilted in favour of people in retirement. By 1986 their benefits had risen to 68% of monthly pre-tax wages, and the tax and social security burden on workers had grown to 16%, reducing their net wages to 84% of the gross amount. This works out to a 5:4 ratio between net wages and benefits.

In the next decades, Japanese society will keep ageing and inevitably the tax and social security burden will grow much heavier. Take-home pay is likely to decline eventually to 75% or even 70% of the pre-tax amount. In the absence of reform, old-age benefits will then be virtually equal to the worker's monthly paycheck. Seen from the pension system's inherent objective of having one generation give a helping hand to another, this would be a strange balance.

To hold the net income balance between the two generations constant, debate on benefit levels must take net wages as its departure point. Therefore in 1994 we rectified our deeply

¹ This arrangement corresponds basically to a system Britain once studied. See Secretary of State for Social Security (1991).

GRAPH 4: Balance of net income between active and retired workers
(percentage of gross income)



Note: SSC = social security contributions.

ingrained habit of examining benefits only in relation to gross wages, before taxes and social security contributions are deducted. The ratio on a net basis is now close to 5:4, and if we like it there, all we need to do is to agree on maintaining it. A consensus on this point alone will keep benefits pegged to a fixed share of net wages no matter how far the ageing process goes, and each pensioner's slice of the pie will remain constant until death, which, compared with the current division, would be much fairer.

Japan is not the only country that has introduced net indexation. Germany recently agreed just such a reform, and its net indexation system went into effect in 1992. Japan followed suit in October 1994.¹

Promoting later retirement with double dipping corrected

The former earnings test between ages 60 to 65 was revised so as to promote later retirement. The new test, as explained, is effective from April 1995.

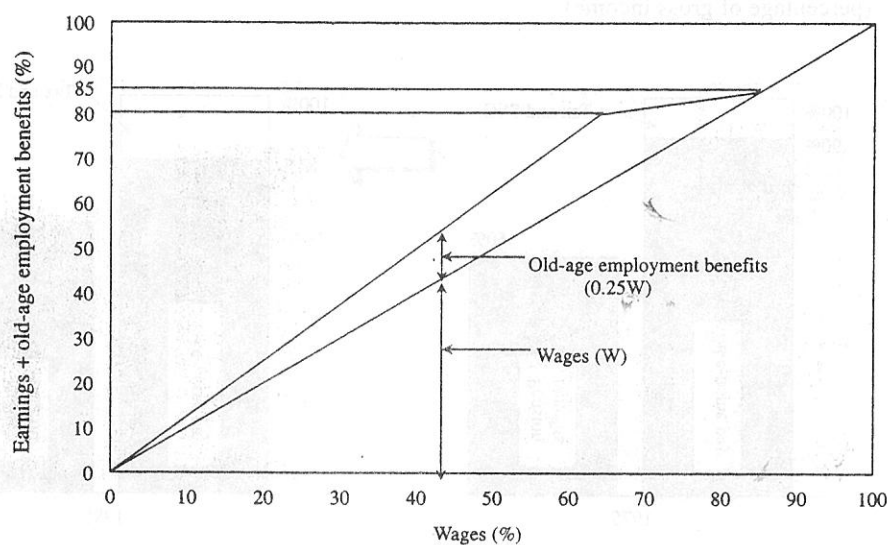
New old-age employment benefits in the unemployment insurance system were introduced in April 1995 to motivate those with the will and the ability to work to remain employed during their early 60s.

In the normal Japanese company, employees reach what is known as the 'mandatory retirement age' at or around 60. Some people do indeed retire then, but many go on working, at least for a while. Instead, what generally happened under the former test system was that at 60, employees, whether they stayed with the same employer or changed jobs, suffered a large salary cut, and at that point the unemployment compensation they were entitled to was often larger than their new wages. The newly introduced measure rectifies this problem by henceforth treating those who see a sharp decline in wages as quasi-unemployed; specifically, these people are to be provided benefits amounting to 25% of their new wages. These benefits, when combined with wage income, will give many of those in the 60 to 64 age group more money than they could receive from unemployment insurance alone. The 25% benefit rate begins to drop at the point where workers are still receiving 64% of their former salary, and for those who receive 85% or more, the rate reaches zero and no benefits are provided (see Graph 5).

Pensions of workers in their early 60s are reduced if they receive old-age employment benefits and if they work at least

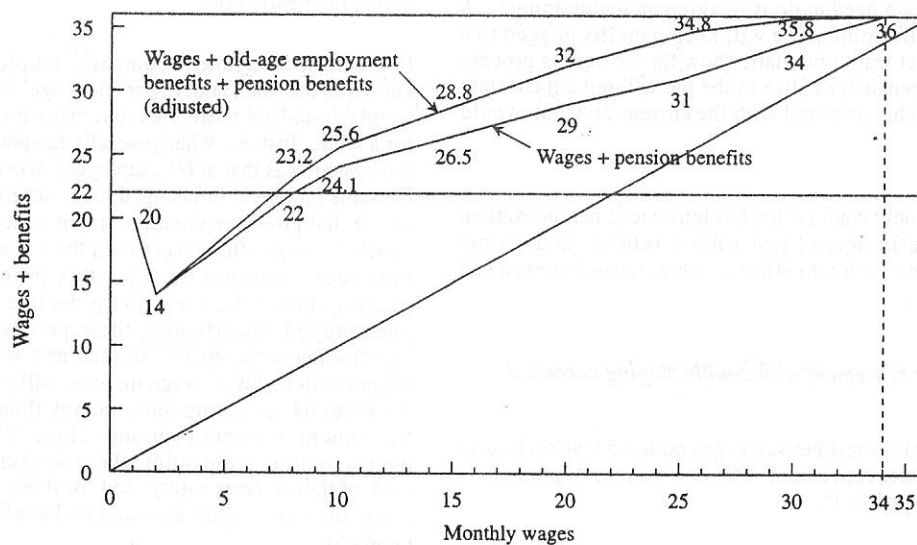
¹ See Schmähl (1993) and Musgrave (1981).

GRAPH 5: Old-age employment benefits



Note: The 100% line of wages means the wage level just before the mandatory retirement age.

GRAPH 6: Wages and benefits for employees in their early 60s in Japan
(unit: YEN 10 000)



Note: The amount of monthly wages just before mandatory retirement is assumed to be YEN 400 000. The full amount of monthly pension benefits is assumed to be YEN 200 000.

33 hours a week. Graph 6 shows the net income of a worker receiving both these old-age employment benefits and the old-age benefits paid by the pension system. To balance the employment benefits, the pensions of such workers are to be cut by an amount equivalent to 10% of their new monthly salary.

People will no longer be able to collect both unemployment and old-age benefits from April 1998. The government will give unemployment benefit to the jobless as long as their coverage lasts, after which they will receive pension payments. In a later adjustment, each 30 days of the basic unemployment allowance will be treated as the equivalent of one month's worth of suspended pension benefits. In cases where the suspended pension exceeds the actual unemployment payments when calculated using this formula, the pension system will provide the beneficiary with an amount sufficient to cover the difference. In this case, it will be those on the pension side who shoulder the adjustment costs.

Survivors' benefits for career women

In principle there is no gender discrimination in survivors' benefits. To grasp where problems arise, consider the differences in the payments to wives in single-income and dual-income families after the husband dies. In the case of couples in old age who have been receiving pensions, both the full-time housewife and the wife who had a job will continue to receive their own basic benefits even after the husband's death; no difference occurs in this respect. The difference lies in earnings-related benefits. The housewife receives 75% of the amount her husband had been receiving. The woman who worked has two options: either she asks to be paid the full pension for her own earnings, or she asks for 75% of her husband's earnings-related benefits, thereby getting the same pension the housewife receives.

Working women expressed strong dissatisfaction with this arrangement. They did not have any return, they complained, on the contributions they themselves made to the pension system. In response, the government has proposed a third survivors' option in its reform package: half the earnings-related benefits that result when the husband's and wife's benefits are combined. This option is essentially identical to the earnings-split formula some Western countries are using, and it should reduce the dissatisfaction of women in dual-income families to some extent. The third option became effective in April 1995.

Exemption of contributions for child care

From April 1995, the new reform frees people on child-care leave from paying their share of pension contributions as well as health and employment contributions. Employers still have to continue to pay contributions as in the past. Under Japanese

law, an employee can take up to 12 months' maternity/paternity leave; generally the employer does not pay salary during the leave period, but the employer must allow the employee to return to the same job when the leave ends.

From April 1995, a benefit for child care was introduced in the employment insurance system. The benefit is 25% of monthly salary just before the child-care leave.

Contributions from bonuses

Since April 1995, contributions are deducted from bonuses. The rate is 1% of the bonuses, with employees and their employers each contributing half this amount. These contributions are not used for benefit calculation purposes.¹

1.1.3. Occupational pensions

Japanese employees receive occupational pensions and/or lump-sum retirement benefits. Currently the coverage of occupational retirement benefits is near 90%, although the coverage of occupational pension plans is about 50%. Typical in retirement benefits is a final pay scheme. Both manual and desk workers within each company are covered by the same plan.

The average lump-sum retirement benefits paid to mandated retired career males were YEN 20 to 24 million in large firms and YEN 10 to 13 million in smaller firms in 1989. The main purpose for employers to have their occupational pension plans is not to pay annuities, but to accumulate funds under favourable tax treatments. In fact, very often, retiring employees choose lump-sum retirement benefits, although their employers have a formal pension plan whose basic form is an annuity.

There are three major schemes for employers to prepare for paying retirement benefits.

- (a) Pay-as-you-go schemes with book reserve accounting (started in 1952, similar to that of Germany). Book reserves are tax deductible within certain limits: namely 40% of the benefit liability can be deducted from income tax calculations as a corporate expense. Originally a deduction was permitted on 100% of the liability.

¹ The KNH covers both Japanese and non-Japanese employees in Japan. Since April 1995, short-term foreign employees can recoup their contributions in a lump sum, subject to a maximum of three years' contributions. For a repayment, at least six months' participation is required. The 1994 reform is also applied to the other four special programmes in the same way. The employees for these special programmes counted for 15% of the total employees, while the old-age pension beneficiaries represented about 30% of the total old-age pension beneficiaries in employees' programmes in fiscal year 1992.

- (b) Tax-qualified plans (started in 1962). The plan must be funded outside through a group annuity contract or a trust agreement. The employers' contributions to a tax qualified plan are 100% tax deductible as a business expense. A special 1.173% corporate tax is levied annually on fund assets. The plan must contain a provision for annuity payments, though a lump sum option is permitted.
- (c) Contracted-out plans (started in 1966) through the Kosei-Nenkin-Kikin (KNK — employees' pension fund). The benefits of the KNK consist of two components: the equivalent benefit of the earnings-related portion of the social security (excluding the benefit resulting from indexing) and the supplementary benefit. The latter is primarily financed by the employer. It can be received in a lump sum at the discretion of the employee, although in principle it should be in the form of a life annuity. The plan must be funded through a trust fund or an insurance contract. The tax treatment of the contracted-out plans is virtually the same as that of the tax qualified plans, except that the KNK does not pay taxes on accrued benefit liabilities equal to 2.7 times the equivalent benefit of the

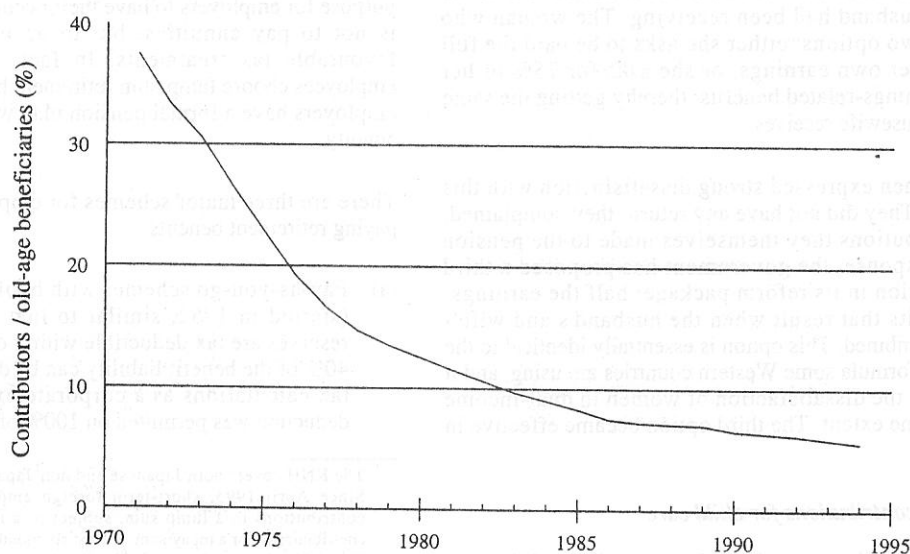
earnings-related portion of the State scheme (with only the undynamized benefit).

Book reserves are not externally funded, but actually have been retained as internal profits, contributing to further investments of the firms. The funded reserve of the tax qualified plans and contracted-out plans has been growing rapidly. It contributes to an increase in national savings in Japan. Prefunding has gradually become common since the introduction of the tax-qualified and the contracted-out plans. Today, occupational retirement benefits in Japan still remain partially funded. It is mainly the tax advantage that decides how much these benefits are funded.

1.1.4. Individual pensions

The accumulation of private saving in Japan is among the highest in the world. The distribution of monetary asset holdings, however, is very much skewed. Most elderly own small monetary assets (see Takayama and Kitamura; 1994). In the past, the role of individual pension plans was not so great. It

GRAPH 7: Contributors/old-age beneficiaries ratio in the KNH



has been rapidly growing, however. The household coverage of individual pension plans had risen to about 35% in 1994.

In April 1991, a special type of individual retirement pension account, called the Kokumin-Nenkin-Kikin, became available for non-employees and their spouses (aged 20 to 60).¹ A contribution of up to YEN 68 000 per month per person is now tax-exempt, which is very generous compared with YEN 50 000 per year (for all) for individual 'pension' insurance policy premiums.

1.2. Current financial performance

In fiscal year 1993 (starting from April), the total sum of basic benefits from social security pensions amounted to YEN 9.2 trillion and that of the KNH, YEN 12.9 trillion, while the sum of contributions to the KNH totalled up to YEN 15.3 trillion, with annual interest of YEN 5.1 trillion from the KNH funded

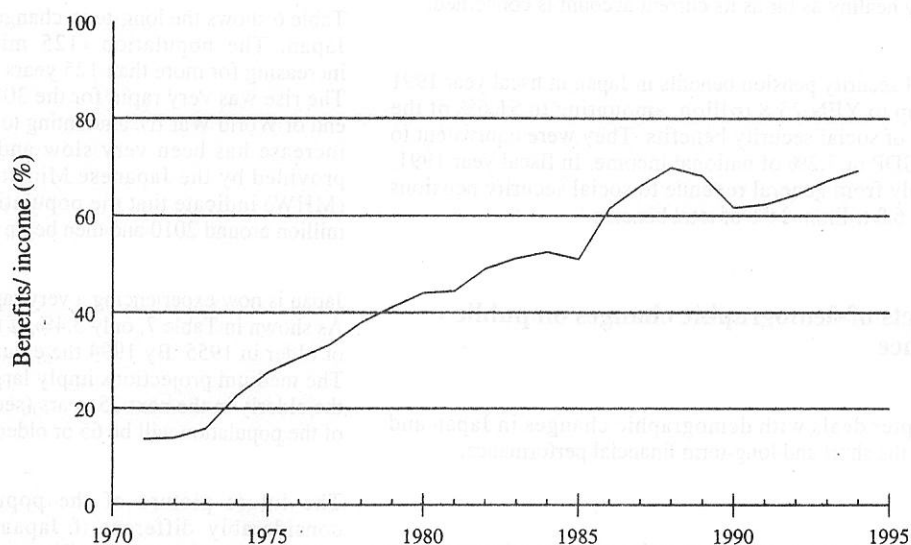
reserve. The current account surplus of the KNH in fiscal year 1993 was YEN 6.7 trillion, with an accumulated reserve of YEN 97.9 trillion at the end of the fiscal year (31 March 1994).²

The average monthly amount of old-age benefits for newly retired male employees with no less than 20 years of coverage was YEN 202 000 in fiscal year 1993. The period of coverage for them averaged 34 years and 8 months. Note that the average HHG (monthly salary) for the KNH active male employees was YEN 341 000 in fiscal year 1993.

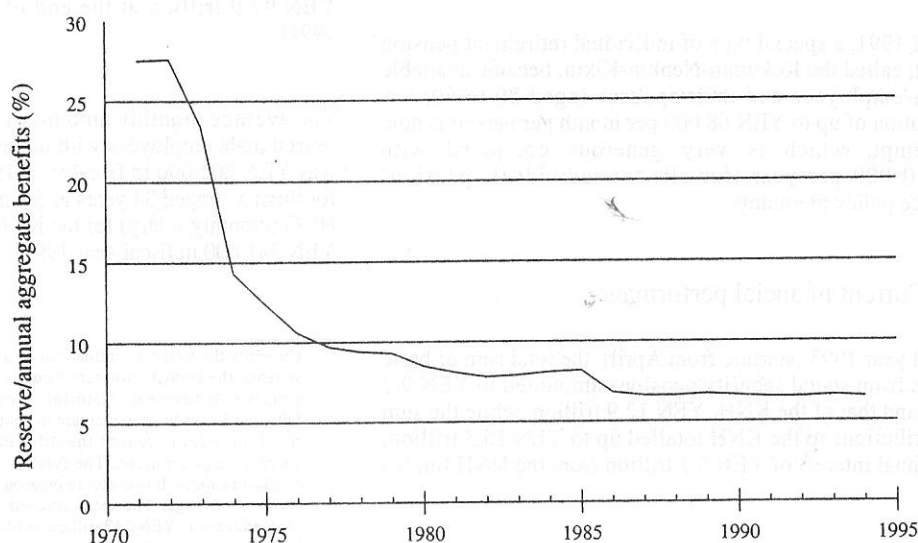
¹ The Kokumin-Nenkin-Kikin was set up by the MHW.

² Currently the KNH is not financed on a full PAYG basis. With a full PAYG scheme, the contribution rate would vary considerably between different generations before its maturing, violating a norm of intergenerational fairness. A step-by-step increase in contribution rates has been built into the KNH, in order to reduce the difference in contribution rates between successive generations. The funded reserve has been invested in social overhead capital. It is useful to promote economic growth if the economy is short of savings. The total amount of funded reserve in the pension programme was YEN 112 trillion in March 1993, causing a large difference between gross and net public debt.

GRAPH 8: Benefits/income ratio in current account of the KNH



GRAPH 9: Reserve/annual aggregate benefits ratio in the KNH



The past and current financial performance of the KNH is depicted in Graphs 7 to 9. The KNH still appears to be financially healthy as far as its current account is concerned.

The social security pension benefits in Japan in fiscal year 1991 totalled up to YEN 25.8 trillion, amounting to 51.6% of the total sum of social security benefits. They were equivalent to 5.7% of GDP or 7.2% of national income. In fiscal year 1991, the subsidy from general revenue to social security pensions was YEN 6.8 trillion, 24% of total benefits.¹

2. Effects of demographic changes on public finance

This chapter deals with demographic changes in Japan and discusses the short and long-term financial performance.

¹ The subsidy from general revenue includes non-contributory pension benefits to public officials involved in the previous scheme, pensions to war victims, and administrative expenses, as well. It excludes the subsidy from the local governments (which totalled YEN 1.7 trillion in fiscal year 1991).

2.1. Demographic projections

Table 6 shows the long-term changes in the total population of Japan. The population (125 million in 1994) has been increasing for more than 125 years since the Meiji restoration. The rise was very rapid for the 30 years following 1945 (the end of World War II), amounting to 40 million. Since 1975, the increase has been very slow and the medium projections provided by the Japanese Ministry of Health and Welfare (MHW) indicate that the population will peak at about 130 million around 2010 and then begin to fall (see Graph 10).

Japan is now experiencing a very rapid ageing of its population. As shown in Table 7, only 5.4% of the population was 65 years or older in 1955. By 1994 the elderly represented about 14%. The medium projections imply large increases in the share of the elderly in the next 25 years (see Graph 11). By 2020, 25% of the population will be 65 or older.

The future picture of the population in Japan will be considerably different if Japan follows the pessimistic projections (the low fertility case). The main difference between the medium and the pessimistic projections comes from the total fertility rate (TFR). The TFR (births per family)

Table 6

Long-term changes in the total population of Japan

Year	Number
	(million)
	Actuals
1872	34.8
1900	43.8
1920	56.0
1925	59.7
1930	64.5
1935	69.3
1940	71.9
1945	72.1
1950	83.2
1955	89.3
1960	93.4
1965	98.3
1970	103.7
1975	111.9
1980	117.1
1985	121.0
1990	123.6
	Medium projections
1995	125.5
2000	127.4
2005	129.3
2010	130.4
2015	130.0
2030	123.0
2045	114.4
2060	105.5
2075	99.5
2090	95.7
	Pessimistic projections
1995	125.2
2000	126.4
2005	127.1
2010	126.8
2015	125.1
2030	113.9
2045	99.3
2060	84.3
2075	71.3
2090	61.6

Sources: Statistics Bureau — Management and Coordination Agency, Japan, Population census of Japan and Institute of population problems — Ministry of Health and Welfare, Japan, Population projections for Japan: 1991-2090, September 1992.

was more than 4.0 before 1949, declining sharply to 2.1 in 1957. It has begun to fall again since 1974 and the current level in 1994 is 1.5. There is still little sign that the TFR will stabilize or return to a higher level. The 1992 medium projections made by the MHW assumed that the TFR would record a historical low of 1.49 in 1994, and would rise to 1.80 in 2025 and increase further to 2.08 in 2090.

The Institute of Population Problems, the MHW, makes population projections every five years after each population census. Each of its medium projections since 1975 turned out to be too optimistic. The 1992 pessimistic projections seem to be more probable since they assume that the TFR will decline to 1.36 in 1998, and will return to 1.45 in 2025, reaching 1.68 in 2090. In this scenario, the total population will peak at nearly 130 million in 10 years, and then begin to fall sharply, reaching half the current number in 2090 (see Table 6 and Graph 10). The proportion of the elderly (65 years and above) on total population will be one third in 50 years (see Table 7 and Graph 11).¹ Japan will then have one of the oldest populations in the world.

2.2. Short and long-term financial performance

Both demographic and economic factors in the future will probably impose greater stresses on the public pension programme. This section first explains short and long-term financial projections carried out officially by the Government Actuary Division in the MHW, and then discusses alternative future scenarios.

2.2.1. Official projections

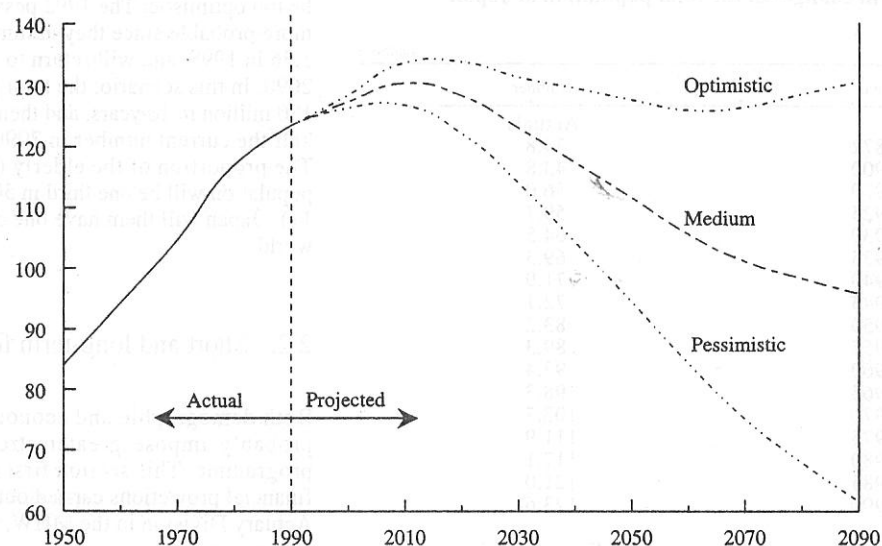
In April 1995, the MHW published a book on the latest financial projections of the first-tier system and of the KNH (see the MHW; 1994). The main assumptions are as follows.

- For population figures, the medium projections in the September 1992 forecast by the Institute of Population Problems, MHW, are used.
- The average nominal growth rate of salary payments (monthly earnings) in gross terms will be 4.0% per year while that of the consumer price index (CPI) will be 2.0% per year.²
- The average nominal growth rate of monthly earnings in net terms (after tax and social security contributions) will be 3.9% per year. This is an implicit assumption.

¹ We only have a few other projections. Japan Center for Economic Research (1991) and The Sumitomo Life Insurance Institute (1994) have made population projections, assuming relatively low TFRs, with the scenario similar to the pessimistic one given by the MHW.

² The current activity and unemployment rates are assumed to remain unchanged in the long term in the MHW and NRI projections.

GRAPH 10: Total population in Japan (million)



GRAPH 11: Population projections of the elderly (age 65 or over) as a percentage of total population

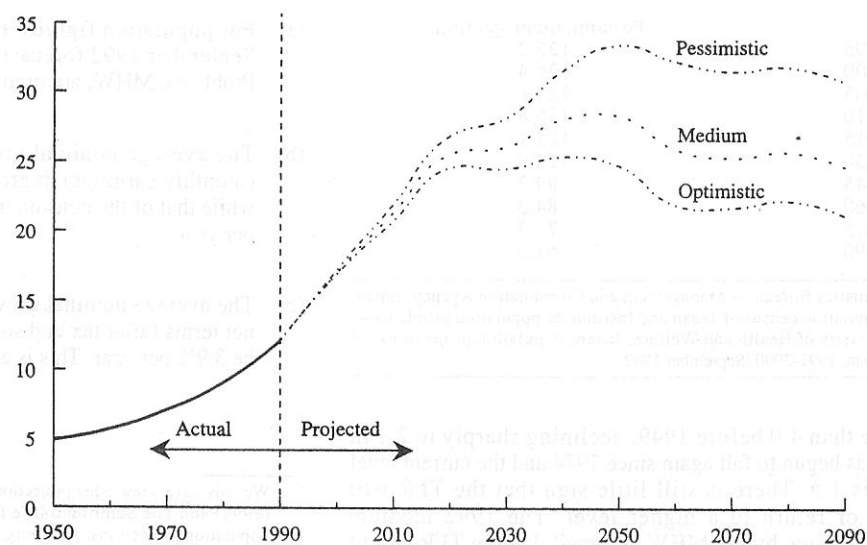


Table 7

Age distribution of population

Year	Age			Dependency ratio (%)
	0-19 (1)	20-64 (2)	65+ (3)	
1920	46.2	48.5	5.2	106.2
1955	43.1	51.5	5.4	94.2
1970	32.8	60.2	7.0	66.1
1985	28.9	60.8	10.3	64.5
1990	26.3	61.7	12.0	62.2
Medium projections				
1995	22.8	62.7	14.5	59.5
2000	21.0	62.0	17.0	61.3
2010	21.1	57.6	21.3	73.6
2020	21.2	53.3	25.5	87.6
2030	19.5	54.5	26.0	83.5
2040	20.1	51.9	28.0	92.7
2050	21.2	50.6	28.2	97.6
Pessimistic projections				
1995	22.7	62.7	14.6	59.5
2000	20.4	62.1	17.2	61.0
2010	18.8	59.3	21.9	68.6
2020	18.0	55.2	26.8	81.2
2030	16.3	55.6	28.1	79.9
2040	16.1	52.4	31.5	90.8
2050	16.4	50.3	33.3	98.8

Note: Dependency ratio = [(1) + (3)] / (2).

Source: See Table 6.

(d) The annual rate of return from the investment of pension funds will be 5.5% in nominal terms.¹

The projections are based on successive rises in pension contributions. In drawing up a schedule for these rises, the following four conditions are assumed.

(e) At maturity, contribution levels are constant and unchanging so as to permit stable pension management.

(f) The upward adjustments in rates every five years will not impose an increasingly heavy burden on each succeeding generation.

(g) No deficit is recorded on the current accounts for any single fiscal year.

(h) A certain level of funded reserves (by convention, enough to cover more than two years of benefits) is kept on hand for weathering any short-term deterioration in economic conditions.

From their projections, we can see the following:

(a) In the first-tier system there will be 4.3 contributors in fiscal year 1995 for every person receiving an old-age pension; in 2015 that number will drop to 2.0 contributors; in 2040 the number will be only 1.6 (see Table 8).

(b) The eligibility ratio, the ratio of the number of old-age retirement beneficiaries to the number of people of 60 years or over (as defined in OECD, 1993) is also given in

¹ There is a large difference between the real rate of increase in wages (2% per annum) and the real rate of return on investment (3.5% per annum). This should be regarded as unrealistic.

Table 8**Population ageing in the first-tier system**

Fiscal year	Contributors (1)	Beneficiaries (2)	(1) (2)	Eligibility ratio (%)	Total benefits (3)
1995	71.2	16.7	4.3	65.1	11.6
2000	71.9	20.9	3.4	71.2	14.7
2005	70.5	25.3	2.8	76.4	17.5
2010	67.0	29.2	2.3	77.5	20.0
2015	64.2	32.5	2.0	81.9	22.2
2020	63.1	33.6	1.9	84.0	23.3
2025	62.8	33.3	1.9	83.5	23.4
2030	61.3	33.1	1.9	82.4	23.3
2035	58.2	33.3	1.7	82.4	23.2
2040	55.3	33.8	1.6	83.1	23.3
2045	53.3	33.2	1.6	81.7	23.0
2050	52.4	32.0	1.6	85.5	22.4
2055	52.2	30.0	1.7	85.5	21.6
2060	51.7	28.0	1.8	83.7	20.7

Notes: Figures of (1) and (2) are in millions.

Figures of (3) are in trillion yen at 1994 prices.

Source: The Government Actuary Division, the MHW (1995).

Table 9**Population ageing in the KNH**

Fiscal year	Contributors (1)	Beneficiaries (2)	Beneficiaries (3)	(1)(2) (4)
1995	33.8	6.7	0	5.06
2000	34.5	8.5	0	4.06
2005	34.0	10.0	0.9	3.38
2010	32.6	11.4	3.7	2.50
2015	31.1	12.4	4.5	2.50
2020	30.4	12.9	4.9	2.36
2025	30.3	12.7	4.8	2.38
2030	29.9	12.5	5.2	2.40
2035	28.9	12.5	5.9	2.32
2040	27.5	12.8	5.2	2.14
2045	26.4	12.8	4.5	2.06
2050	26.0	12.5	4.0	2.08
2055	25.9	11.8	3.7	2.19
2060	25.9	11.0	4.1	2.35

Notes: 1. Contributors and beneficiaries are in millions.

2. Beneficiaries (2) only include those receiving old-age benefits, excluding the recipients of disability and survivors' benefits.

3. Beneficiaries (3) are those born after 2 April, 1941, receiving the tier-2 benefits in their early 60s.

Source: The Government Actuary Division, MHW (1995).

Table 8. It will be 65.1% in fiscal year 1995, gradually increasing to 84% in 2020, and thereafter remain rather stable.

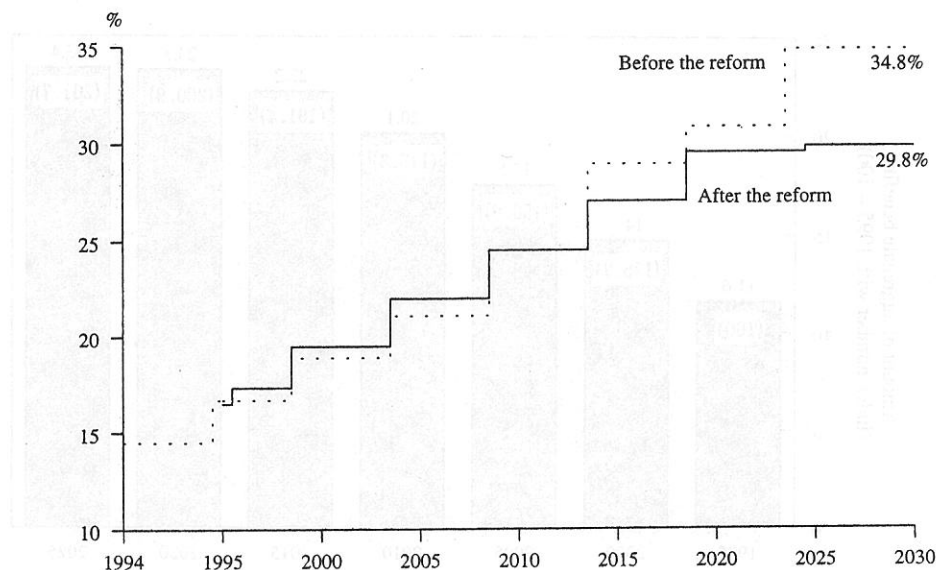
- (c) The situation in the KNH will not be very different (Table 9). In fiscal year 1995, there will be 5.1 workers contributing for every recipient of KNH old-age benefits; in 2020, the number will decrease to 2.4 workers; in fiscal year 2045, where will be only 2.1 workers paying for each retiree.
- (d) Substantial increases in the contribution rate of the KNH and of Class 1 enrollees will be required to support currently legislated benefits (Graphs 12 and 13). The projections envisage further 2.5 point rises every five years for the KNH until fiscal year 2025, when the rate will plateau at 29.8%.¹ The contribution rates for Class 1

persons were YEN 11 100 per month in fiscal year 1994 and were increased only slightly to YEN 11 700 in April 1995. They will go up further by YEN 500 each year until 2015, when the monthly payment reaches a maximum of YEN 21 700 at 1994 prices. In short, in the next 20 or 30 years contributions will have to be double the 1994 levels.

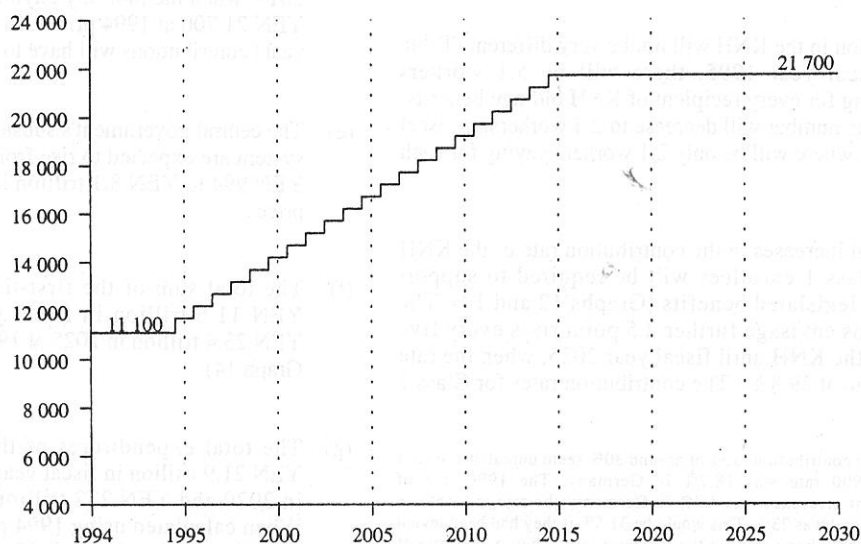
- (e) The central government's subsidies to the first-tier pension system are expected to rise from 3.9 trillion in fiscal year YEN 994 to YEN 8.1 trillion in fiscal year 2025 at 1994 prices.
- (f) The total sum of the first-tier basic benefits will be YEN 11.6 trillion in fiscal year 1995, increasing to YEN 23.4 trillion in 2025 at 1994 prices (see Table 8 and Graph 14).
- (g) The total expenditures of the KNH will swell from YEN 21.9 trillion in fiscal year 1995 to YEN 111 trillion in 2020 and YEN 277 trillion in 2045 (see Table 10). When calculated using 1994 prices and setting the total benefits in fiscal year 1995 at 1.0, the amount will measure 3.6 in 2020 and 4.0 in 2025 (see Graph 15).

¹ Public pension contribution rates of around 30% seem unrealistic at first sight. The 1990 rate was 18.7% in Germany. The 1990 rate of unemployment insurance was 4.3% in Germany (the rate is 1.15% in Japan). Their total was 23%. This would be 31.5% if they had been levied on salaries without bonuses as in the Japanese case. Thus, a 30% rate of contribution might be politically feasible also in Japan in the long term. It would nevertheless produce considerable adverse economic effects.

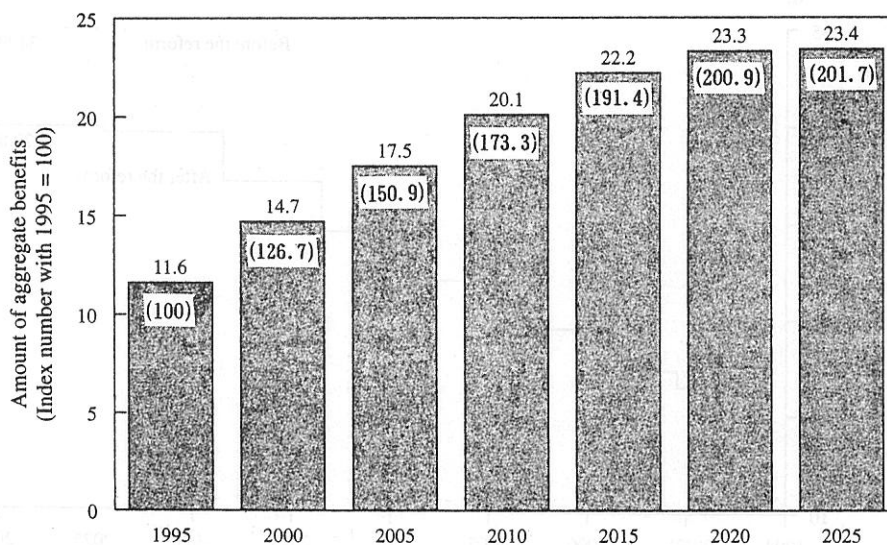
GRAPH 12: Contribution rates of the KNH: official projections



GRAPH 13: Monthly contributions for Class 1 enrollees in the KNH
(YEN at 1994 prices)



GRAPH 14: Growth of aggregate basic benefits
(in trillion YEN at 1994 prices)



GRAPH 15: Growth of aggregate benefits of the KNH
(in trillion YEN at 1994 prices)

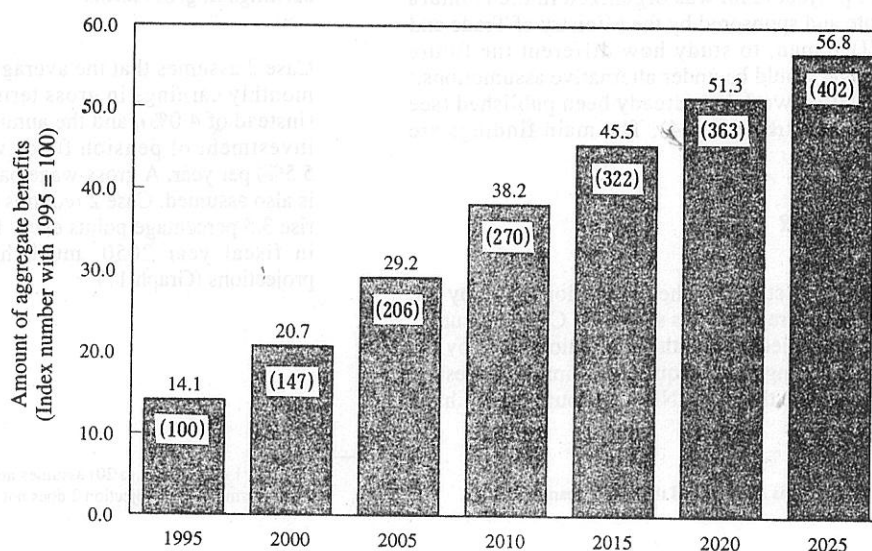


Table 10

Long-term financial performance of the KNH (after the diet approval on 2 November 1994)

Fiscal year	Contribution rate (%)	Total expenditure [1]	Surplus [2]	Funded reserve [3]	[3]/[1]
1995	16.5	21.9	8.7	132.2 (132.2)	5.7
2000	19.5	34.0	10.1	180.8 (149.0)	5.0
2005	22.0	50.4	8.9	226.6 (154.9)	4.3
2010	24.5	70.5	5.8	262.9 (149.3)	3.7
2015	27.0	91.0	4.8	289.6 (136.6)	3.1
2020	29.5	111.2	9.7	328.2 (128.6)	2.9
2025	29.8	133.2	13.1	399.2 (129.9)	2.9
2030	29.8	159.8	15.3	492.8 (131.9)	3.0
2035	29.8	194.0	12.3	587.9 (129.4)	3.0
2040	29.8	233.4	6.6	662.0 (119.7)	2.8
2045	29.8	277.1	3.3	720.4 (107.1)	2.6
2050	29.8	326.7	1.7	771.2 (94.2)	2.4
2055	29.8	381.3	8.8	844.8 (84.8)	2.2
2060	29.8	446.5	21.0	982.4 (81.1)	2.2

Notes: 1. Figures of [3] without parentheses are in trillion yen in nominal terms. Those in parentheses are in trillion yen at 1995 prices.

2. Main assumptions are as follows: (a) the annual CPI increase is 2.0%, (b) the nominal wage-rate increase is 4.0% per annum, and (c) the nominal rate of return is 5.5% per annum.

3. The funded reserve includes those of the contracted-out portion (undynamized) in the KNHs.

Source: See Table 9.

2.2.2. Projections under alternative assumptions

The government's financial projections are carried out under a set of demographic and economic assumptions that can be questionable. A project team was organized in the Nomura Research Institute and sponsored by the Ministry of Trade and Industry (MITI), Japan, to study how different the future pictures of the KNH would be under alternative assumptions.¹ The team's simulation work has already been published (see Nomura Research Institute; 1994). The main findings are outlined below.

(a) Case 1: Lower TFR

The medium projections of the population given by the MHW may not be regarded as standard. Case 1 assumes the pessimistic projections of the population given by the MHW, all other things being equal. The simulation results (Graph 16) indicate that the KNH contributions will have

to be raised up to 32.0% in fiscal year 2025, instead of 29.8%.²

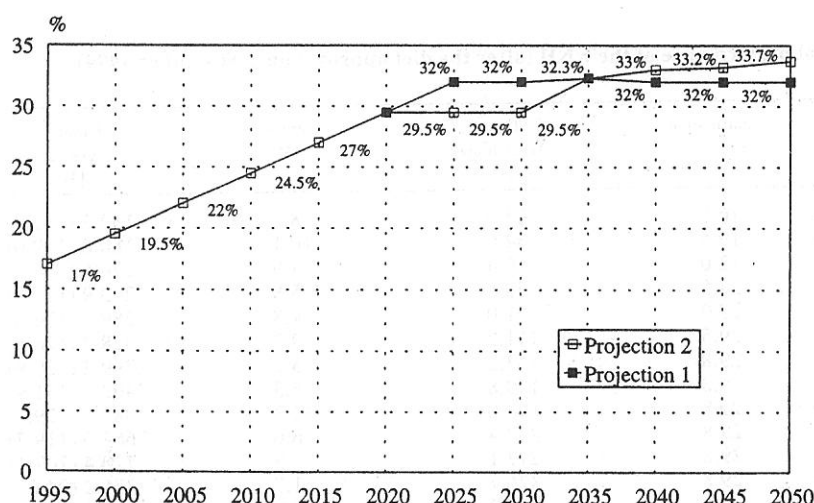
(b) Case 2: Lower average nominal growth rate of monthly earnings in gross terms

Case 2 assumes that the average nominal growth rate of monthly earnings in gross terms will be 2.0% per year (instead of 4.0%), and the annual rate of return from the investment of pension funds will be 3.5% (instead of 5.5%) per year. A gross-wage based indexation of benefits is also assumed. Case 2 requires the KNH contributions to rise 3.5 percentage points every five years, to reach 37.3% in fiscal year 2050, much higher than the official projections (Graph 17).

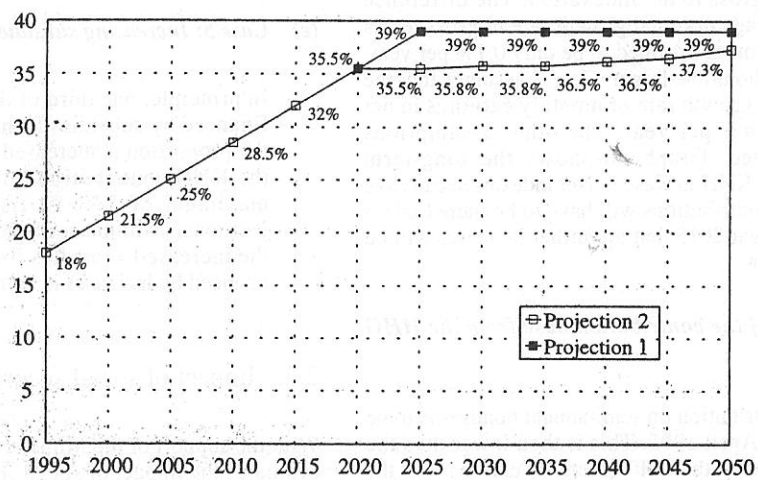
¹ The author of this paper was a member of the project team.

² Projection 1 (Figures 16 to 20) assumes no decreases in funded reserves in nominal terms, while Projection 2 does not.

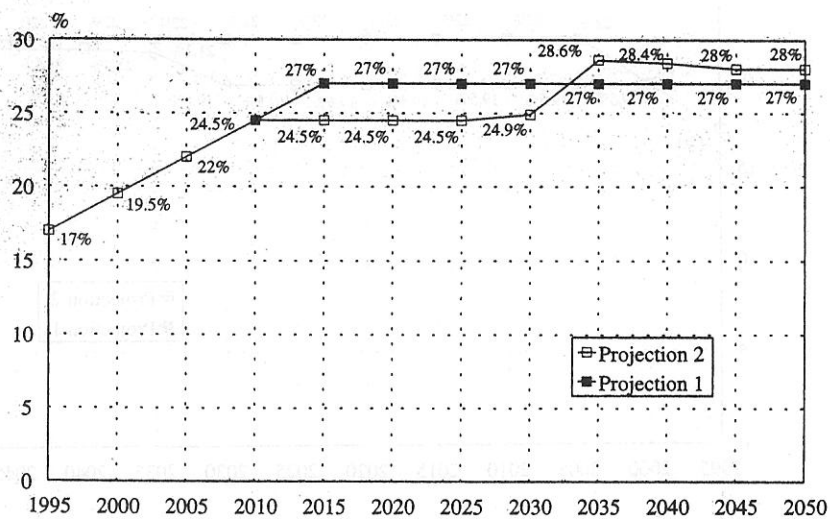
GRAPH 16: Contribution rates of the KNH: pessimistic demographic assumptions



GRAPH 17: Contribution rates of the KNH: zero real growth of gross monthly earnings



GRAPH 18: Contribution rates of the KNH: another net indexation case



(c) Case 3: Lower average nominal growth rate of monthly earnings in net terms

Official projections assume a very modest effect of switching from gross to net indexation. The difference between the average nominal growth rate in gross terms and that in net terms is assumed to be only 0.1% per year. This difference should be larger. Case 3 assumes that the average nominal growth rate of monthly earnings in net terms will be 3.4% per year. The other assumptions remain unchanged. Graph 18 shows the long-term projections of the KNH in Case 3. Net indexation can save KNH costs; the contributions will have to be increased up to 27% in fiscal year 2015, but no further increases will be required thereafter.

(d) Case 4: Switch of the contribution base from the HHG to total earnings

A special 1% contribution on semi-annual bonuses is to be introduced from April 1995. This is then lower than the current 16.5% rate on the HHG (monthly earnings). If the 16.5% rate is applied to semi-annual bonuses, then the KNH contributions will have to be increased up to 22% in fiscal year 2005 and, thereafter, no further increases will

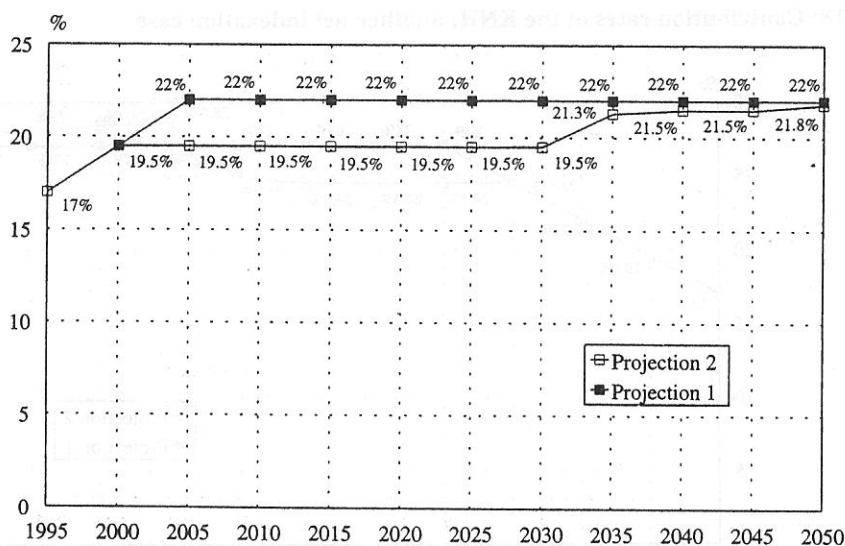
be necessary (Graph 19). Note that this switch merely means intra-generational redistribution of public pension burdens, the projected aggregate contributions from each generation remaining unchanged.

(e) Case 5: Increasing subsidies from general revenue

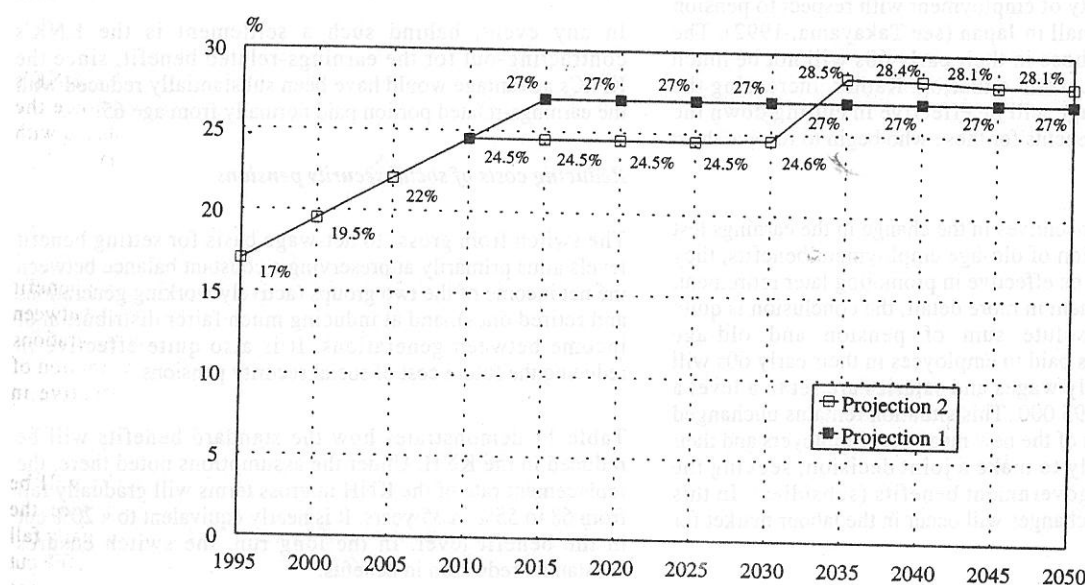
In principle, one third of the first-tier basic benefits are financed by subsidies from general revenue in Japan. If the proportion is increased from one third to a half, then the KNH contribution rate will have to be raised to a maximum of 27% in fiscal year 2015 (Graph 20). Pensioners will finance a part of increased pension costs if the increased subsidies from general revenue are to be financed by increases in consumption-based taxes.

2.3. Impact of social security on public finance

With the support of the Ministry of Finance, the MHW (1994) evaluates the impact of social security on public finance as a whole. It is assumed that national income will increase by 4.0 to 5.0% per year until 2000 in nominal terms, and by 3.0 to 4.0% from 2000 to 2025. The GDP deflator is assumed to be

GRAPH 19: Contribution rates of the KNH: on the total earnings base

GRAPH 20: Contribution rates of the KNH: with one-half government subsidy



1.5% per year. In fiscal year 1993, the total amount of subsidy to social security (pension, health care, unemployment, and other welfare services) was 4.8% of national income. It will be 6.5% in 2000, and 8.5 to 10.0% in fiscal year 2025 (see Table 15 below). Note that these estimates take into consideration the 1994 pension reform. Public expenditures other than for social security amounted to 20.8% of national income in fiscal year 1993. Greater and greater public deficits will occur in the future unless each item of public expenditure is severely cut. Further reductions in public pension benefits are, therefore, inevitable.

3. Appraisal of the 1994 reform and future policy options

This chapter will assess the 1994 reform of public pensions and then discuss future policy options.

3.1. Appraisal of the 1994 reform

The 1994 reform of public pensions in Japan represents another major change of the pension system, since it has succeeded in the long pending issue on raising the normal commencement

age of public pension benefits, and in introducing 'net indexation'. More remains to be said about the economic effects of the reform.

Will the elderly work more?

The government intended to promote later retirement by raising the normal commencement age of benefits in the KNH and by revising the earnings test. Will these measures be really effective?

As already shown in other OECD countries, legislation on increasing the normal age of retirement alone is not enough to reverse the trends towards early retirement. Indeed, on reaching the age of 60, a long-term enrollee can still enjoy the very generous pension benefits if he or she receives advance payments from the first-tier system even after 2013. It is because in the standard case of a long-term enrollee who fully retires at the age of 60, the total benefits including advance payments of basic benefits will probably amount to between 60 and 70% of the active worker's take-home pay. This level is in no way inferior to that of other industrially advanced countries. When the income of the pensioner is set at 100, the after-tax wages of the active worker lie between 143 and 167. If one

takes the differences between households into account — one with an old-aged couple, the other with four household members — this does not seem an unreasonable balance.

Besides, the elasticity of employment with respect to pension benefits is rather small in Japan (see Takayama; 1992). The labour market for those in their early 60s will not be much different from the current situation. Rather, increasing the normal retirement age will be effective in cutting down the amount of pension benefits for those who begin to receive them before the age of 65.

Turning to the new incentives in the change in the earnings test and in the introduction of old-age employment benefits, they seem at first sight to be effective in promoting later retirement. But if we examine them in more detail, the conclusion is quite different. The absolute sum of pension and old-age employment benefits paid to employees in their early 60s will be highest if monthly wages and salaries are set to a level a little less than YEN 95 000. This situation remains unchanged after the introduction of the new measures. Employers and their employees are likely to make a joint decision, seeking the highest amount of government benefits (subsidies). In this sense, no significant changes will occur in the labour market for the elderly.

Decision on eligibility for payment

Originally, the KNH was based on the earnings-related portion alone; a two-tier structure was introduced in the 1954 reform. After fiscal year 2013, benefits to workers in the first half of their 60s are once again, in principle, to be based solely on the earnings-related portion. It is as if the problem which existed at the time of the 1954 reform has reappeared. Opinions may

differ as to whether the continuation of the earnings-related portion is good for those who have to retire at 60 or who have less employment opportunities. It appears to be a major setback in the eyes of low earners.

In any event, behind such a settlement is the KNK's contracting-out for the earnings-related benefit, since the KNK's advantage would have been substantially reduced with the earnings-related portion paid normally from age 65.

Reducing costs of social security pensions

The switch from gross- to net-wage basis for setting benefit levels aims primarily at preserving a constant balance between the net income of the two groups (actively working generations and retired ones), and at inducing much fairer distribution of income between generations. It is also quite effective in reducing the future cost of social security pensions.

Table 11 demonstrates how the standard benefits will be reduced in the KNH. Under the assumptions noted there, the replacement rate of the KNH in gross terms will gradually fall from 68 to 55% in 35 years. It is nearly equivalent to a 20% cut in the benefit level. In the long run, the switch ensures substantial reduction in benefits.

Increase in contributions

The rate of increase in contributions is by no means an uncontroversial subject. At present the Japanese economy remains mired in a slump, and nervousness about job security is running high. In 1994, the government decided to cut national and local income taxes by YEN 5.5 trillion to boost the economy, but the

Table 11

Net income of actively working generations

Year	Annual growth Rate of gross salary	Actively working generations		Retired generations	
		Gross salary	T&SSC	Net salary	Public pension benefits
1995		100	16	84	68
	20%	200	64	136	110
2030	1.0%	142	45	97	78
	0.6%	123	39	84	68

Notes: 1. The amount of gross salary in 1995 is assumed to be 100.

2. Tax burdens and social security contributions (T&SSC) are assumed to equal 16 % in 1995 and they will double in 2030.

3. Public pension benefits in net terms are set to equal 80% of net salary of actively working generations.

impact of this relief will be largely offset by the higher contributions, which will annually add YEN 3.8 trillion to pension funds. Government leaders appear divided on management of the economy.

A 2 percentage point increase in the KNH contribution rate is equivalent to a 1 percentage point wage increase for employers, on the one hand, and a 1 percentage point fall in take-home pay on the other. It will have adverse effects on business activities, and consequently on the whole Japanese economy. As we will see later, it is also of the utmost importance to ensure that the financial requirements of public pension schemes do not prevent the continued growth of active generation's net income. The 2% increase in the KNH contributions fares badly also on this latter ground.

In addition, Japan now faces external trade balance problems. Increased surplus in current account of social security pensions can lead to a further increase in excess domestic saving over investment. This will intensify the US-Japan trade problems.

Why does the Japanese Government intend to speed up the increase in the contribution rate of social security pensions? The current unanticipated downfall in the TFR is one answer, although there is also another, unofficial one. The secret lies in an anticipated decline in funded reserves of the KNH in nominal terms, as shown in the 1990 Government Actuary Report (see Table 12). Even with 2.2 percentage point rises every five years in the KNH contribution rate, its funded reserve will show a nominal decline within 10 years. Then the fiscal investment and loan programme (FILP) of our

government will face a serious turn. The government officials are very likely to be reluctant to accept this turn, in spite of so many doubts raised by the experts concerned at the current efficiency of the FILP. As a result of the larger increases in KNH contribution rates (from 2.2 to 2.5 percentage points every five years), the nominal decline in the KNH funded reserve is projected to take place in 15 to 20 years (instead of 5 to 10 years), as shown in Table 13.¹

It is true that there is a long-term need to avoid imbalances in pension schemes. But there is a short-term need to respond to several economic conditions. In my view, the best way is to raise the KNH contribution rate little by little each year, say, by a 0.5 percentage point.

3.2. Policy options

There have been many issues on public pensions in Japan. Major issues discussed for the past five years and not settled yet are as follows.

A shift from a PAYG to a funded scheme

The declining growth rate of the economy along with the rapidly ageing population has made more and more people

¹ The nominal decline in the KNH funded reserve will probably turn the public sector into deficit, contributing to moving the external current balance into deficit, too.

Table 12

Projections in funded reserves — I (in trillion YEN)

Fiscal year	Public schemes				Total (1+2+3+4)	TQP
	KNH (1)	KN (2)	Others (3)	KNK (4)		
1991	77.0	5.7	32.0	28.3	143.0	14.4
1995	93.2	8.2	39.8	43.1	184.3	21.5
2000	99.8	12.0	50.1	69.5	231.4	33.7
2005	83.1	16.9	60.8	107.2	268.0	50.2
2010	55.6	22.8	70.8	159.2	308.4	71.7
2015	29.1	27.6	77.9	229.3	363.9	100.1
2020	-17.3	31.2	84.4	321.4	419.7	137.7
2025	-46.4	35.2	92.9	442.0	523.7	187.7

Notes: 1. Reserves in the KNH exclude those contracted out by the KNKs. The figures of (1) are the estimates by the present author.

2. TQP: Tax-qualified plans.

3. Total reserves are those included in social security fund statistics of national accounts (SNA).

Source: The 1990 Government Actuary Report, and others.

Table 13

Projections in funded reserves — II (in trillion YEN)

Fiscal year	Public schemes				Total (1+2+3+4)	TQP
	KNH (1)	KN (2)	Others (3)	KNK (4)		
1991	67.9	4.4	33.7	28.3	134.3	14.4
1995	108.1	8.9	42.5	43.1	202.6	21.5
2000	144.1	12.8	56.3	69.5	282.7	33.7
2005	171.7	17.8	71.7	107.2	368.4	50.2
2010	183.0	23.7	86.8	159.2	452.7	71.7
2015	176.9	30.8	99.1	229.3	536.1	100.1
2020	172.0	38.0	110.6	321.4	642.0	137.7
2025	184.8	45.8	125.7	442.0	798.3	187.7

Source: The 1995 Government Actuary Report, and others.

Table 14

Social security wealth for couples with one male earner in the KNH

Birth year	Benefits (1)	Contributions (2)	(1)/(2) (3)
1924	76.8	4.2	18.3
1929	74.8	5.3	14.1
1934	69.3	7.8	8.9
1939	67.1	10.2	6.6
1944	62.4	12.7	4.9
1949	59.0	15.3	3.9
1954	58.6	17.9	3.3
1959	58.5	20.4	2.9
1964	58.2	22.4	2.6
1969	58.1	24.5	2.4
1974	58.1	26.4	2.2
1979	58.1	27.9	2.1
1984	58.1	29.0	2.0
1989	58.1	29.9	1.9
1994	58.1	30.4	1.9

- Notes: 1. Monthly standard earnings (HHG) of YEN 340 000 with a 40-year coverage are assumed.
 2. Contributions are only from employees, with those from their employers excluded.
 3. The nominal discount rate is 5.5% per year. The other assumptions are the same as given in Table 10.
 4. Figures in (1) and (2) are the present value of the discounted (or accumulated) sum in million yen at 1994 prices.

Source: The Government Actuary Division, MHW (1995).

aware of an incentive compatibility problem in our pay-as-you-go programme of public pensions. According to the latest estimates by the MHW, shown in Table 14, younger generations will find that their participation in the KNH does not pay. Note that the present value of contributions (Table 14) should be doubled, since contributions from employers are also likely to be borne by employees.

To avoid the incentive compatibility problem stated above, some suggest that a shift to a funded (or actuarially fair) programme is more advisable.¹ They are very reluctant to approve income transfers from younger generations to older ones through the public pension system. The shift is proposed to encourage savings and thereby to boost the economy.

It should be borne in mind, however, that the transition from a pay-as-you-go to a funded system involves considerable difficulties, since the transitional generation has to participate in both systems, paying for pensions twice. This will be especially so in a political sense for a society where population ageing is still going on. Besides, in today's Japan it is doubtful if the public sector will be more effective than the private sector in stimulating economic growth through investing the funded reserve. Continuing to reduce the generous level of old-age benefits of social security pensions on a pay-as-you-go basis together with giving many more incentives to private pensions on a funded basis seems more advisable, at least in Japan where there is no longer a need for forced saving.

¹ See Hatta-Oguchi (1992) and World Bank (1994), for example.

Further reduction in pension levels

There still remains room for further reduction in public pension benefit levels even after the 1994 reform. The contributory period required for the full old-age pension should be increased from the current 40 years to 45 years. And the normal pensionable age can be raised further from 65 to, say, 67.²

Thus far bonuses have not been considered in the earnings test.¹ Again, the 1994 reform will not affect the practice of awarding full benefits to those who continue to receive wage income but work fewer than 33 hours per week, as in the case of part-time advisors and people working on commission. Furthermore, once a private-sector wage earner reaches the age of 65, the full pension becomes payable regardless of whether he or she is earning a high salary.³ Extra benefits should be introduced for old-age pensioners who become disabled. Those benefits should be adjusted to fit the needs of the individuals at each stage of retirement. Alternatively, a social insurance programme of long-term care should be set up.

Continued economic growth

As the population gets older, the key to Japan's future will be continued economic growth (compare Graphs 12 and 17, again). Were the economy to fail to expand as the share of senior citizens in the population increased, the real after-tax pay of workers would decline. Younger Japanese would despair of achieving a higher standard of living than their parents, and the present level of intergenerational transfers from workers to the retired would become hard to maintain. Distrust in politics would intensify, and everyone would begin fighting for bigger slices of the pie.

For the next 20-odd years the share of the elderly (65 or over) will increase by a 0.5 percentage point each year on average. But, as Table 11 indicates, if real per worker gross earnings grow at least 1.0% per year, the take-home pay of the productive population will continue to rise to some extent, pushing living standards higher.

In this light, we need to approach the question of funding from the perspective of circumventing constraints on economic

growth. We must ask which of the three main revenue sources available — the income-based tax, social security contributions, and the consumption-based tax — will slow down growth the least. The answer is consumption-based tax.

Unlike income-based taxes, which are taken at source, the consumption-based tax does not function as a direct levy on the saving and investment that powers the economy. Social security contributions, meanwhile, have a character midway between income- and consumption-based taxes in their effect on growth. They are inherently fairly regressive. And because they are a component of personnel costs, their effect on corporate behaviour is not neutral. If these contributions become too onerous, companies will shift production offshore to places where personnel costs are lower, and domestic production will stagnate. In this respect too, social security contributions are highly problematic. Accordingly, over the long term, it will make sense to fund part of the increased costs of our greying society by raising the current 3% rate of the consumption tax. By choosing this option, we will also be able to lighten the extra load that young and middle-aged Japanese have to shoulder, thereby spreading burdens more evenly than at present over the various life stages.

In the funding debate thus far, the general assumption has been that the best way to redistribute burdens is to place less emphasis on taxes and more on social security contributions. This was the conclusion reached by the blue-ribbon panels studying administrative reform and it has guided the reform process thus far. Today, however, we need to rethink this approach.

Table 15 reports the 1994 official projections of aggregate social security benefits, contributions and subsidies from general revenue. Government policy is shifting towards a gradual rise in tax rates.

Graphs in Table 15 assume no changes in the share of subsidies from general revenue in the cost of basic benefits. When the 1994 pension reform was being debated in the Diet, however, there was much talk about whether or not to increase government subsidies from one third to a half. The change would increase the amount of government subsidy up to YEN 12.1 trillion (instead of YEN 8.1 trillion) in fiscal year 2025 at 1994 prices, thereby decreasing the KNH contribution rate from 29.8 to 27.0% in fiscal year 2025, as shown in Graph 20. A tax increase will be inevitable but politicians are still very reluctant to agree to any kind of rise in tax rates.⁴

¹ No quantification of the likely effect of a further increase in the standard working life has yet been established. Note that the increase of normal retirement age in the 1994 reform is estimated to cut about 5% of KNH total expenditure in 2020.

² There is no economic rationale for leaving bonuses almost entirely outside the system. But the Nikkeiren (the representative of managers in big businesses) strongly opposes the change, since the inclusion of bonuses into the system will surely cost more for bigger companies.

³ Currently the per-capita after-tax income (including in-kind benefits) for the elderly in Japan is about 15% higher than the national average. They are better off than the young or middle aged in terms of assets held (see section 2.3 in Takayama, 1992).

⁴ An upper change in the share of the government subsidy in the cost of basic benefits may ease the drop-out problem of Class 1 persons, who actually are not forced to enroll in the system, though the law states that participation is compulsory.

Table 15

Projections of aggregate social security benefits/contributions and subsidies from general revenue as a percentage of national income

Fiscal year	Total SS benefits (1)	Pension benefits	Total SS contributions	Subsidies from general revenue (2)
1993	16.3	8.6	13.0	4.8
2000	20.0-20.5	10.5	15.0-15.5	6.5
2010	25.5-27.0	14.0	17.0-18.0	7.5-8.0
2025	28.0-31.5	15.0	19.0-21.0	8.5-10.0

Notes: 1. Social security benefits in Japan cover pension, medical and other welfare benefits.

2. Subsidies from general revenue include those from local governments.

3. National income is assumed to grow at 2.5 to 3.5% every year in real terms until fiscal year 2000, and thereafter at 1.5 to 2.5% every year.

4. The 1994 pension reform is assumed.

Source: MHW (1994).

Encouraging later retirement

If we really want to increase employment for the elderly, we should have incentives operating directly on the demand side of the labour force, rather than on the supply side. The current legislation is not cost-neutral as to the decision of employers to employ people in their early 60s. If employment neutrality of public pensions to those in their early 60s is desirable, public pension benefits paid to those in the 60 to 64 age bracket should come from their former employers (and/or employees). The so-called merit system in contribution rates will be required to set them lower for those businesses that actively employ older people.

To promote later retirement, it is crucial for older workers to increase productivity. Training incentives to this end should be more freely available. Job redesigning for greater productivity in part-time or flexitime employment is also required.

Pensions for women

Turning now to the debate over providing pension coverage to part-timers (mostly females), we find that the current system does not directly apply to those who work fewer than 33 hours per week. In principle these part-timers are treated like full-time homemakers. But if their annual pay exceeds YEN 1.3 million they lose the right to be treated as a dependent spouse. They then become obliged to participate in the tier 1 system as Case 1 enrollees. Because this arrangement tends to encourage part-time jobs that pay less than YEN 1.3 million, calls are being made for the introduction of a system in which part-timers can enrol. And to strengthen their incentive to enrol, survivors' pensions should probably be further improved.

Four other problematic points involving pensions for women have also been raised. First, a full-time housewife who divorces has no right to claim part of the earnings-related benefits her husband accumulated while she was married. It has been suggested that the right to these benefits be divided between the two. Second, payments of survivors' pensions terminate upon remarriage, but critics say they should continue. Third, critics also find it strange that a spouse who marries after beginning to receive an old-age pension becomes entitled to claim a survivor's pension. Fourth, while a fatherless family has the right to a survivor's annuity, a motherless family does not. This, it is said, violates equality of the sexes.

Supporting childbirth and the raising of children

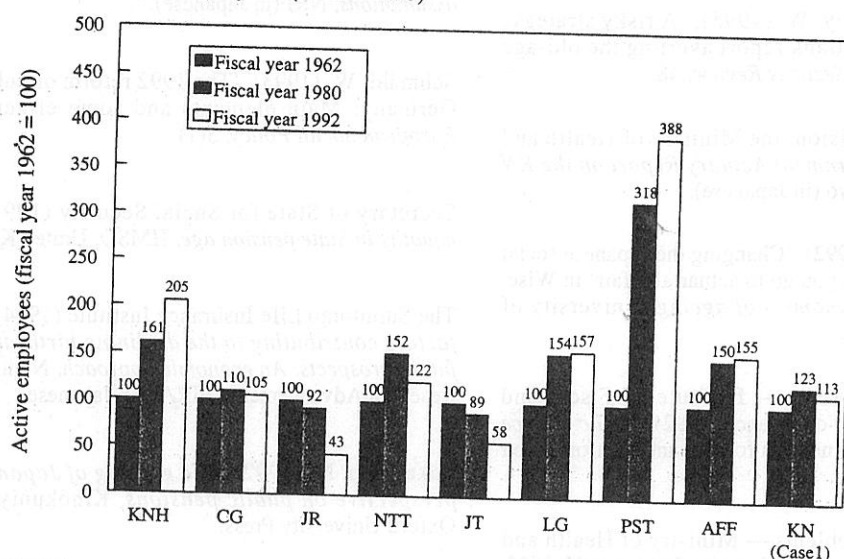
The current continued declining TFR in Japan is also serious. Younger Japanese workers aged under 30, who are expected to build new technologies into corporate practice, will begin to decrease sharply in number from year 2000 on. This may become a bottleneck in the labour supply.

In order to stabilize the declining TFR or return to a higher level, several policy measures have to be adopted. In the pension field, for example, there is a pressing need to use the system to support both childbirth (by introducing childbirth benefits) and the raising of children by use of a child-support deduction when public pension contributions are calculated.

Revenue sharing in the second-tier system

Japan has five systems of public pension schemes covering different sectors of the labour force. The growth rates in the number of the active employees were quite different among

GRAPH 21: Growth of active employees (1962 = 100)



NB: KNH = Kosei-Nenkin-Hoken
CG = Central Government

JR = Japan railway

NTT = Nippon Telephone and Telecommunication
JT = Japan Tobacco

LG = Local government

PST = Private school teachers
AFF = Agriculture, forestry
and fishing organizations
KN = Kokunin-Nenkin

them for the past 30 years, as shown in Graph 21. Consequently, their financial situations vary considerably. The worst case is Japan Railway (JR) and the second worst, Japan Tobacco (JT). The contribution rates of JR and JT are currently 20% higher than the KNH rate, while they have been subsidized on an *ad hoc* basis by other schemes.

Systematic revenue sharing is now being discussed, but each special scheme has its own vested interests. The future picture is still totally unclear.

3.3. Final remarks

The 1994 reform has succeeded in raising the normal pensionable age and in introducing net indexation. No significant changes will occur in the labour market for the elderly, however, since long-term enrollees can still enjoy very generous pension benefits on reaching the age of 60. The switch to the net-wage basis will reduce benefit amounts substantially. The increase in the KNH contribution rate in November 1994 was unnecessary and ill-advised. Rather it should be raised little by little each year, say, by a 0.5 percentage point.

There still be several policy options in the future. Further reductions in the level of public pension benefits are worth recommending. Bonuses should be fully included in the

earnings base. Later retirement should be encouraged. Part-timers should be motivated to enrol in the system. Supporting childbirth and the raising of children should be devised in the public pension programme to stabilize the declining TFR. Continued economic growth is definitely in need to maintain public pension finance healthy.

We Japanese have difficulty in dealing with long-term problems, and tend to rely on 'old' systems rather than risk innovative ones. Only when problems become extreme are we likely to change the old for the new.

On the other hand, we are flexible, and respond promptly once we recognize the gravity of a given problem. We forgive and forget, as was the case when the Japanese resolved the oil crisis in the mid-1970s or the sharp rise in yen value in the exchange markets in the mid-1980s. In our social policies, we succeeded in changing the public pension programmes quite drastically twice, in 1985 and again in 1994. Indeed, these reforms could be termed revolutionary, since we succeeded in reducing a part of earned entitlements to nil.

The Japanese now face another test. Do we still have enough flexibility/adaptability to handle the coming difficulties in public pensions? If the answer to this question is yes, then our experience will help the policy makers in other industrial countries.

References

- Beattie, R. and McGillivrey, W. (1995), 'A risky strategy: Reflections on the World Bank report averting the old-age crisis', *International Social Security Review*, 48.
- Government Actuary Division, the Ministry of Health and Welfare (1995), *The Government Actuary Report on the KN and the KNH*, Hohken, Tokyo (in Japanese).
- Hatta, T. and Oguchi, N. (1992), 'Changing the Japanese social security system from pay as you go to actuarially fair' in Wise, D. (ed.), *Topics in the economics of ageing*, University of Chicago Press.
- International Research Group — Institute of Fiscal and Monetary Policy — Ministry of Finance (1992), *Public finance and tax system in Japan*, Foundation for Advanced Information and Research (FAIR), Japan.
- Institute of Population Problems — Ministry of Health and Welfare (1992), *Population projections for Japan: 1991-2090*, September.
- Japan Centre for Economic Research, headed by Ogura S. (1991), *Population projections for Japan until 2020*, JCER, DP-16 (in Japanese).
- Ministry of Health and Welfare (ed.) (1994), *A health and welfare vision towards the 21st century*, Dai-Ichi-Hohki-Shuppan (in Japanese).
- Miyazawa, K. (ed.) (1993), *The cost of social security in Japan: FY1969 to FY1990*, Social Development Research Institute, Tokyo.
- Murakami, K. (1995), 'The 1994 pension reform in Japan and future issues', *Benefits and Compensation International*, pp. 2-8, April.
- Musgrave, R. A. (1981), 'A reappraisal of social security financing', in Skidmore, F. (ed.), *Social security financing*, MIT Press, pp. 89-127.
- Nomura Research Institute (1994), *A simulation analysis of long-term financial performance of the KNH under alternative assumptions*, NRI (in Japanese).
- Schmähl, W. (1993), 'The 1992 reform of public pensions in Germany: Main elements and some effects', *Journal of European Social Policy*, 3(1).
- Secretary of State for Social Security (1991), *Options for equality in State pension age*, HMSO, United Kingdom.
- The Sumitomo Life Insurance Institute (1994), *A study of the factors contributing to the declining birthrate in Japan and future prospects: An economic approach*, National Institute for Research Advancement (NIRA) (in Japanese).
- Takayama, N. (1992), *The greying of Japan: An economic perspective on public pensions*, Kinokuniya (Tokyo) and Oxford University Press.
- Takayama, N. (1995a), 'The 1994 Reform Bill for public pensions in Japan: its main contents and related discussion', *International Social Security Review*, 48(1), pp. 45-65.
- Takayama N. (1996), 'Gradual retirement in Japan: Macro issues and policies', in Delsen, E. and Reday-Mulvey, G. (eds.), *Gradual retirement in the OECD countries*, Dartmouth Publishing Company Limited.
- Takayama, N. and Kitamura, Y. (1994), 'Household saving behaviour in Japan', in Poterba, J. M. (ed.), *International Comparisons of Household Saving*, pp. 125-167, University of Chicago Press.
- Van den Noord, P. V. and Herd, R. (1993), 'Pension liabilities in the seven major economies', OECD, Economics Department Working Papers, No 142.
- World Bank (1994), *Averting the old-age crisis*, Washington.

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