

(1) Title:

Some indicators to compare the financial situation of social security pension plans

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(3) Abstract:

Sometimes actuaries have to evaluate the financial situation of pension plan from outside. They are not accustomed to this because they usually evaluate the pension plan from inside, often from a managerial viewpoint using an actuarial forecasting model. This approach needs a lot of data and time to operate the model; therefore it is not applicable to a quick external evaluation. Published data are usually not sufficient to evaluate the financial situation of a plan using an actuarial forecasting model.

The former Actuarial Subcommittee, Advisory Council on Social Security, Prime Minister's Office, now The Actuarial Subcommittee, Social Security Council, Ministry of Health, Labor and Welfare, faced the above situation. In the 1980s they had to evaluate the financial situation of eight separate social security pension plans in a few years with some common measures, because the Japanese government aimed first to stabilize the future financial condition of the separate social security pension plans at that time and then to disclose the current financial condition of all social security pensions and establish conditions for unifying all social security pensions by 1995 after they had introduced the common Basic Pension Plan in 1985.

The Actuarial Subcommittee developed some indicators to evaluate the financial situation of pension plans and used them to compare the financial situation of the eight pension plans, and now the five pension plans, after the consolidation processes moved

towards unification. We will see how they work by using chronological data and indicators calculated for the eight plans.

We will also discuss the possibility of applying these indicators to social security pension plans in other countries.

1. Introduction

In the mid-1970s, Japanese social security pension plans were separated into eight plans and 27 insurers. The industry-based separate pension plans showed financial and structural imbalance due to socio-economic and industrial structural change.

In February 1984, the Japanese cabinet decided that the coverage of National Pension Plan should be expanded to include the insured and their spouses and be paid common benefits (called Basic Pension) and that all the social security pension plans should be unified by 1995. That cabinet decision gave the new role to the Actuarial Subcommittee, Advisory Council on Social Security, Prime Minister's Office, to discuss and evaluate the financial condition of the social security pension plans in order to secure their long-term financial stability and balanced development in the light of the unification of all the social security pension plans.

The Actuarial Subcommittee developed five indicators (later changed to six indicators) to evaluate the financial situation of pension plans and used them to compare the financial situation of the eight (now five) pension plans. We will see how they work by using chronological data and indicators calculated for the eight (now five) plans.

2. Historical review of Japanese Social Security Pension Plans

The Japanese public pension plans started with the Pension Plans for Armed Forces or Government Officers in the late 19th Century. In the early 20th century, Mutual Aid Associations were established for public or private factory or enterprise workers.

The first general social security pension plan for private sector workers was the Laborers' Pension Insurance established in 1942. This plan was renamed Employees' Pension Insurance in 1944 and became the forerunner of the current Employees' Pension Insurance.

In 1961, the National Pension Plan, which covered farmers, fishermen and the self-employed, was established and a Universal Pension System was attained, which meant any Japanese resident should be enrolled in one of the social security pension plans.

Thanks to the high economic growth of the Japanese economy in the 1960s and 70s, the

benefit level of the Social Security Pension had been improved since the mid-1960s; the monthly benefit payment was 10,000 yen in 1965, 20,000 yen in 1969, and 50,000 yen in 1973. Cost of Living Adjustment and Reassessment of Remuneration were also introduced in 1973. After the first oil crisis in 1973, the Japanese economy turned from high to moderate growth, so that the pension benefit improvements effected in 1973 became a very heavy burden on the social security pension plan. Social security pension plans have had to struggle to maintain financial stability since then.

To maintain financial stability, expansion of the financial basis was necessary, in addition to flexible responses to socio-economic change and changes in industrial structure change. In the mid-1970s, Japanese social security pension plans were separated into eight plans (see Table 1) and 27 insurers. The separate industry-based pension plans showed financial and structural imbalance due to socio-economic and industrial structural change, and management information, including financial information, had not been fully disclosed for those pension plans.

Table 1. Japanese social security pension plans in the mid-1970s

- (1) Employees' Pension Insurance (EPI): For general private workers
- (2) Seamen's Insurance (Consolidated into EPI in 1986)
- (3) National Public Service Personnel Mutual Aid Association (NPSP)
(To be consolidated into EPI in 2010 after the new law discussed in the Diet has been enacted)
- (4) Local Public Service Personnel Mutual Aid Association (LPSP)
(To be consolidated into EPI in 2010 after the new law discussed in the Diet has been enacted)
- (5) Mutual Aid Corporation for Private School Personnel (PSP)
(To be consolidated into EPI in 2010 after the new law discussed in the Diet has been enacted)
- (6) Public Enterprise Workers' Mutual Aid Association (the Japan National Railways Mutual Aid Association, the Japan Tobacco Mutual Aid Association and the Nippon Telegraph and Telephone Mutual Aid Association) (Consolidated into EPI in 1997)
- (7) Mutual Aid Association for Agricultural, Forestry and Fishery Organization Personnel (AFF) (Consolidated into EPI in 2002)
- (8) National Pension Plan: For farmers, fishermen and the self-employed,

Therefore The Actuarial Subcommittee, Advisory Council on Social Security, Prime Minister's Office, was established to discuss and evaluate the financial situation of the social security pension plans in order to secure their long-term financial stability and balanced development. In February 1984, the cabinet decided that the coverage of the National Pension Plan should be expanded to include employed persons and their spouses and be paid common benefits¹ and that all the social security pension plans should be unified by 1995.

The Actuarial Subcommittee, Advisory Council on Social Security, Prime Minister's Office was abolished in a reform of government ministries in 2000 but their roles and responsibilities were passed to The Actuarial Subcommittee, Social Security Council, Ministry of Health, Labor and Welfare.

3. Evaluations of Japanese Social Security Pension Plan Financial Situation

3.1 Japanese Social Security Pension Plans and their financing

The Japanese Social Security Pension System is in two tiers. The first tier is the National Pension Plan, which is also called Basic Pension Plan. It is a flat-rate pension plan and covers all Japanese residents. The second tier is the Employees' Pension Insurance for private workers and the Mutual Aid Associations for National and Local Public Service Personnel and private school personnel (EPI, NPSP, LPSP and PSP). They are earnings-related plans.

The first tier Basic Pension Plan is financed by State subsidies and contributions to the Basic Pension Plan from employee pension plans and the National Pension Account. The second tier – employee's pension plans – is financed by contributions from employers and employees, investment income and Subsidies for “Bestowals” Payments of prior period²

In 2004FY, total revenue was 42.4 trillion yen at book value (45.3 trillion yen at market

¹ For technical reasons the National Pension Plan is made up of two accounts: The first one is the National Pension Account for the pensions for farmers, fishermen and the self-employed. The second is the Basic Pension Account

² Pensions for government officers were changed from Pension Plans for government officers to Mutual Aid Associations around 1960. Pension benefits for the period prior to the plan change are paid by subsidies for “bestowals” payments (recognition of past service).

value), of which 25.7 trillion yen was from contributions and 6.4 trillion yen was from State subsidies and 1.7 trillion yen from subsidies for “Bestowals” payments from a prior period. Total expenditure, meanwhile, was 42.1 trillion yen, including 41.6 trillion yen benefits. Therefore the balance was 0.4 trillion yen at book value and 3.3 trillion yen at market value. The reserve at the end of 2004FY was 198.1 trillion yen at book value and 199.6 trillion yen at market value.

Figure X. Financial Settlement of Japanese social security pension plan (Total, 2004FY)

Classification		Public pension plans as a whole (Consolidated base)
		100 million yen
Total revenue	(book value)	424,171
	(market value)	[453,363]
Contributions		256,525
Subsidies by state etc.		63,838
Subsidies for "bestowals" payments of prior period		17,383
Investment income	(book value)	27,632
	(market value)	[56,471]
Payment of the cost for consolidation of former MAAs		1,374
Payment of the cost for the occupational portion exceed EPI		3,144
Payment of the cost for contracting back in to EPI of EPFs		53,854
Others		* 421
Total expenditure		420,610
Benefits		416,200
Others		4,410
Balance of revenues and expenditures	(book value)	3,561
	(market value)	[32,753]
Reserve at the end of fiscal year	(book value)	1,980,611
	(market value)	[1,996,378]

Note: To calculate revenue and expenditure in consolidated base, the following contributions and corresponding revenue are excluded from both revenue and expenditure summation because those contributions and income are paid from one public pension plan to other public pension plan: contribution to Basic Pension, contribution to the equivalent to benefits of Basic Pension (old law (pension law effective before FY1986)), contribution representing inter-plan fiscal adjustments between NPSP and LPSP and contribution to support JT MAA, JR MAA and NTT MAA that consolidated to EPI. Additionally the amount of transfer from the surplus of previous year (1,528.5 billion yen) in Basic Pension Account is excluded from "Others" (*) in revenue.

3.2 Financial Indicators which the Actuarial Subcommittee are now applying

The Actuarial Subcommittee published its first Report in February 1985, which proposed and applied the following five financial indicators to evaluate the financial situation of eight separate social security pension plans.

Table 1. Five financial indicators which the Actuarial Subcommittee proposed in the First Report

- 1) Support Ratio = the same as in Table 2 (= Pension Support Ratio)
- 2) Net Contribution (Rate) = the same as in Table 2 (= Comprehensive Cost rate)
- 3) Expenditure/Revenue Ratio = the same as in Table 2
- 4) Benefits/Remuneration Ratio = Present value of Benefits /Present value of Remuneration
- 5) Funding ratio = the same as in Table 2 (= Reserve Ratio)

These indicators were changed after discussion because, after publication of the first report, the social security pension plans were completely reformed, including the introduction of the Basic Pension Plan, and some data had ceased to be available to calculate indicators and some indicators had become distorted. The Actuarial Subcommittee changed the five initially proposed indicators to an alternative five indicators, all of which have been used from then until now, though one more indicator, – Pension-type Cost rates – was added.

At present the Actuarial Subcommittee is using the following six financial indicators for evaluating the financial situation of Social Security Pension Plans.

(1) Pension Support Ratio = “Number of Insured”/”Number of Old-age Pensioners restricted to long-term contributors (simply abbreviated as ”OAP”)”.

This ratio indicates how many Insured employees support an Old-Age Pensioner. If this indicator is high, there is a good number of insured to support Old-Age Pensioners.

The Pension Support Ratio is generally high for a while after starting the plan, and gradually becomes lower. This is because there are few OAP with long-term entitlement at the initial stage, and the number will increase as time passes. This is called pension plan “maturing”. The Pension Support Ratio is the indicator which shows the maturity of the pension plan on a head-count basis.

In a pay-as-you-go pension plan, the lower the Pension Support Ratio the more the burden of pension cost on active members, and the higher the Pension Support Ratio the less the burden on active members.

(2) Comprehensive Cost Rate = ”Actual Expenditure – State subsidies” /”Total

Remuneration” x100

“Actual Expenditure – State subsidies” is that part of expenditure which should be financed by the plan itself, namely the amount of expenditure financed by contributions and investment income. “Actual Expenditure – State subsidies” is an amount subtracting from total expenditure including benefits the amount financed by State subsidies and Subsidies for “ Bestowals” payments. The Comprehensive Cost Rate is the percentage that “Actual Expenditure – State subsidies” bears to “Total Remuneration”. This is a fundamental indicator to evaluate the financial situation of a pension plan.

If we replace ”Number of Insured” by “Total Remuneration” and “Number of Old-age Pensioners” by “Actual Expenditure – State subsidies” in the Pension Support Ratio, we can understand the Comprehensive Cost Rate as an indicator which shows the maturity feature of a pension plan on a monetary basis (however the Comprehensive Cost Rate will increase as the plan matures, in contrast to the Pension Support Ratio, which will decrease).

The Comprehensive Cost Rate is the contribution rate in a pay-as-you-go pension plan (with no reserve nor investment income). Therefore, the Comprehensive Cost Rate is sometimes called the net pay-as-you-go contribution rate.

(3) Basic Pension Cost Rate and Independent Benefits Cost Rate

The numerator “Actual Expenditure – State subsidies” of the Comprehensive Cost Rate can be divided into two components – expenditure relating to Basic Pension and other expenditure (“Independent Benefits“).

Expenditure relating to the Basic Pension = Contribution to the Basic Pension Plan

(excluding State subsidies)

Expenditure relating to Independent Benefits = Actual Expenditure – State subsidies –

Contribution to the Basic Pension Plan (excluding

State subsidies)

We define the Basic Pension Cost Rate and the Independent Benefits Cost Rate as the percentages that the above amounts bear to Total Remuneration.

Basic Pension Cost Rate = Contribution to the Basic Pension Plan (excluding State

subsidies) /Total Remuneration x 100

Independent Benefits Rate = (“Actual Expenditure – State subsidies” – Contribution to
Basic Pension Plan (excluding State subsidies))/ Total Remuneration x 100

From the definitions, Comprehensive Cost Rate= Basic Pension Cost Rate + Independent
Benefits Cost Rate

(4) Expenditure/Revenue (Exp/Rev) Ratio

Exp/Rev Ratio is the percentage ratio that “Actual expenditure – State subsidies”,
which should be financed by the plan itself, bears to “Contributions + Investment
income”.

Exp/Rev Ratio= “Actual Expenditure – State subsidies“/ (Contributions + Investment
income) x 100

If the Exp/Rev Ratio is less than 100%, the amount which should be financed by the plan
itself can be financed by contributions and investment income. I f the Exp/Rev Ratio is
more than 100%, other resources such as liquidation of reserves become necessary.

(5) Reserve Ratio

The Reserve Ratio is an indicator which shows how large the reserve is in terms of years
of expenditure provided for in advance. This is a ratio of the reserve at the end of the
previous fiscal year to “Actual expenditure – State subsidies”

Reserve Ratio = ”Reserve at the End of the Previous Fiscal Year / (Actual Expenditure –
State subsidies) x 100

The “Extent of Reserve” is a similar indicator to the Reserve Ratio. But the extent of
reserve shows how large the reserve at the end of previous fiscal year is in terms of years
of Actual Total Expenditure (Actual Expenditure + Subsidies for “ Bestowals” Payments).
This is different from the Reserve Ratio which shows how large the reserve at the end of
previous fiscal year is in terms of years of expenditure financed by contributions
(Excluding State subsidies)

Extent of Reserve = “Reserve at the End of the Previous Fiscal Year” / “Actual
Expenditure + Subsidies for “ Bestowals” Payments”

= (Numerator of Reserve Ratio)/((Denominator of Reserve Ratio) + State subsidies
+ Subsidies for “ Bestowals” Payments)

The Reserve Ratio analyses the reserve from the point of view of contributions and Extent of Reserve analyses the reserve from the point of view of benefits. The Actuarial Subcommittee uses the Reserve Ratio, because they are interested in how much reserve the pension plan has compared with the cost which should be financed by the plan itself excluding State subsidies and Subsidies for “ Bestowals” Payments, which are stipulated by law.

(6) Pension-type Cost Rates

The Pension Support Ratio is an indicator which shows the maturity of the plan on the basis of the number of members, with a numerator of “ Number of Old-age Pensioners”. However, in addition to Old-age Pensions, Pension Benefits include Survivorship Pensions and Disability Pensions, which are not included in the Pension Support Ratio. Therefore, The Actuarial Subcommittee also introduced Pension-Type Cost Rates (Old-age Pensions, Survivorship Pensions and Disability Pensions) , and used them as complementary indicators.

Old-Age Pension Cost Rate = Old-Age Pension Benefits included in “Actual Expenditure – State subsidies”/ Total Remuneration x 100

Survivorship Pension Cost Rate = Survivorship Pension Benefits included in “Actual Expenditure – State subsidies”/ Total Remuneration x 100

Disability Pension Cost Rate = Disability Pension Benefits included in “Actual Expenditure – State subsidies”/ Total Remuneration x 100

The Comprehensive Cost Rate and Pension-type Cost Rates have following equation:

Comprehensive Cost Rate = Old-age Pension Cost Rate + Survivorship Pension Cost Rate
+ Disability Pension Cost Rate + Other (Contributions) Cost Rate

Table 2. shows the Financial Indicators which the Actuarial Subcommittee are using at present and Table 3 shows the most recent Financial Indicators available for the current Social Security Pension Plans in the 2006 Fiscal Year.

Table 3 shows the financial indicators for all social security pensions excluding the National Pension System because it does not have a total remuneration figure available.

The Pension Support Ratios of NPSP and LPSP are lower than the other pension plans, which reflects the fact that their histories are longer than the others. Among Supplementary indicators, Old-Age Pension Cost Rate is by far the most important.

The differences of Comprehensive Cost Rates between pension plans mainly depend on the Pension-Type Cost rate, especially the PSP has the lowest old-age pension cost rate, which reflects both its lack of maturity and its characteristic of paying more lump sum benefits than pensions.

The Exp/Rev Ratio shows that EPI could not afford the cost on the basis of contribution and investment income in 2004FY but needed the liquidisation of some of the reserves.

Please note the data for 2004. In 2004 Japan enacted a major reform to the Social Security Pension Plans and the act has been effective since 2005. The reform included the introduction of an annual increase in the contribution rate for EPI up to 18.3% and the so-called “Macro-Economic Arrangement” which reduces the old-age pension replacement ratio to about 50% from 59% through the decrease of insured numbers and the future increase of life expectancy after the age of 65. Therefore the prospect is that the financial condition of Japanese Social Security Pension Plans will get better and the Exp/Rev Ratio will fall below 100%.

The level of the Reserve Ratio mainly reflects the historical level of the contribution rate as compared with the comprehensive cost rate.

Looking at Table3 we can separate the pension plans into two groups. One group consists of NPSP and LPSP, whose Pension Support Ratios are lower and Reserve Ratios are higher, showing their maturity. The second group consists of EPI and PSP, which still show immature characteristics.

Table 2. Financial Indicators which the Actuarial Subcommittee are using at present

- (1) Pension Support Ratio = Number of Insured/Number of Old-age Pensioners.
- (2) Comprehensive Cost Rate = "Actual Expenditure – State subsidies" /"Total Remuneration" x 100
- (3) Basic Pension Cost Rate = Contribution to the Basic Pension Plan (excluding State subsidies) /Total remuneration x 100
- Own-Payment Cost Rate (Independent Benefits Cost Rate)
= (Actual expenditure – State subsidies – Contribution to Basic Pension Plan (excluding State subsidies))/ Total remuneration x 100
- (4) Exp/Rev Ratio = (Actual expenditure – State subsidies)/(Contribution + Investment

income) x 100

(5) Reserve Ratio = The reserve at the end of previous fiscal year / (Actual expenditure

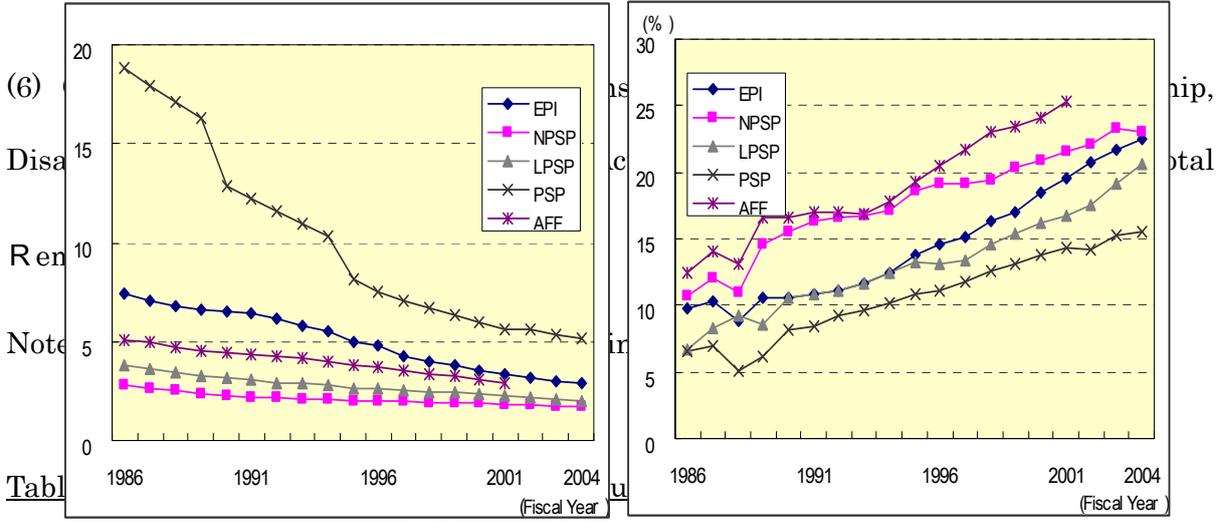
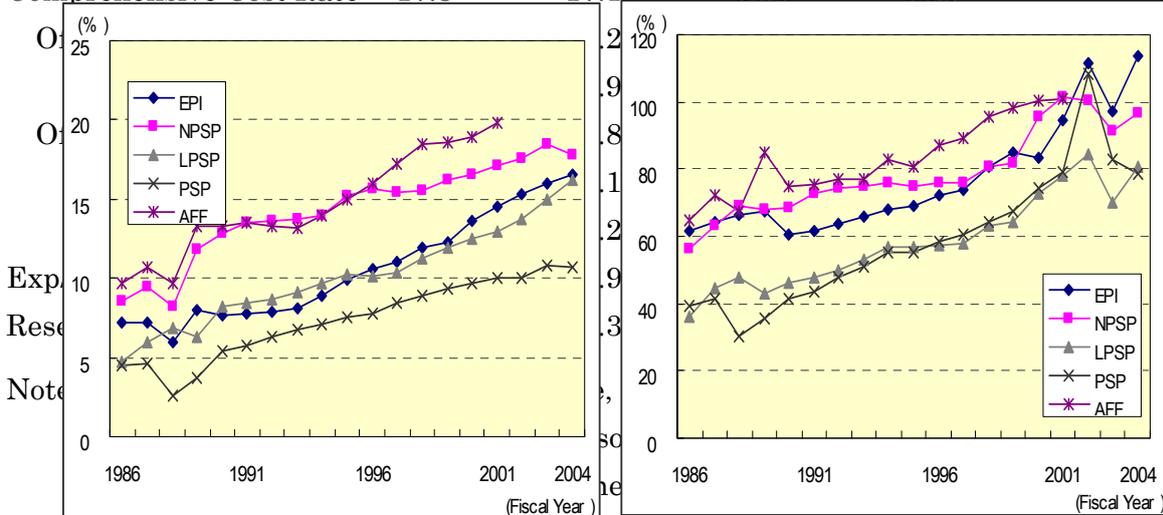
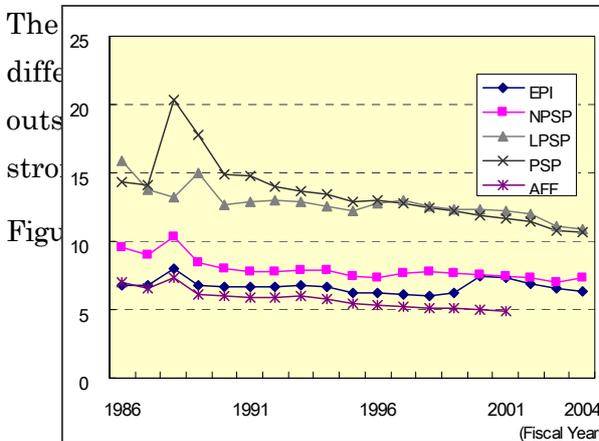


Figure 3. Trend of Independent Benefits

Figure 4. Trend of Exp/Rev



PSP=Mutual Aid Corporation for Private School Personnel
 Note 2.: Definitions of the indicators are shown in Section 3.2.



financial indicators not only to compare the in the given year but also to compare “from omic change of their financial condition and plan .
 Figure 2. Trend of Comprehensive Cost Rate

Figure 1 shows that Pension Support Ratio of each pension plan declines and PSP declines more rapidly but its level is higher.

Figure 2 shows that the Comprehensive Cost Rate for AFF³ rose rapidly up to 25%, the highest rate, in 2001, which induced the consolidation of AFF to EPI. Similar features of the AFF appear in Figure 3 and Figure 4.

In Figure 4 the Exp/Rev Ratio of PSP rose above 100% in 2002 and went back below 100% in 2003. This is because the investment income of PSP was negative in 2002 and the revenue declined.

Figure 2 and Figure 3 show the decline of both the Comprehensive Cost Rate and the Own Payment Cost Rate for NPSP, whose trends were different from the trends of the other pension plans. These trends result from the subsidy system from LPSP to NPSP which started in 2004.

5. Application of the Financial Indicators to Other Social Security Pension Plans

5.1 USA

Some financial indicators are also used for social security pension plans in some countries. For the OASDI in the USA, the following indicators, which are sometimes known as “financial indices”, are used:

(1) The Number of Beneficiaries per 100 Covered Workers

“The Number of Beneficiaries per 100 Covered Workers” is used for the OASDI in the USA. This indicator shows the maturity status of the pension plan and is a reciprocal of the Pension Support Ratio used in Japan. But the US indicator includes all the old-age pension beneficiaries whereas the Japanese indicator only includes old-age pension beneficiaries who are long-term contributors. This difference might be partly due to the difference of benefit entitlement (10 years of contributory service in the USA and 25 years in Japan).

(2) Cost Rate

The Cost Rate is used in the US OASDI, corresponding to the Japanese Comprehensive Cost Rate. The Japanese social security pension plan is a two tier system, so that the Japanese Comprehensive Cost Rate is made up of the Basic Pension Cost Rate and the Independent Benefits Cost Rate.

(3) Annual Balance

In the US OASDI, the Income Rate is defined as revenue excluding investment income as

³ Mutual Aid Association for Agricultural, Forestry and Fishery Organization Personnel

a percentage of taxable payroll, and the Annual Balance is defined as the difference between the Income Rate and the Cost Rate in a given year.

They are watching carefully the time when the Annual Balance will go into the red, because their reserve is financed in special government bonds, so that cashing them will have a big influence on the US budget and economy, including the financial markets.

(4) Trust Fund Ratio

This indicator shows how many months of benefits the reserve fund is equivalent to, namely the proportion of a year's cost. It is the same as Japanese Reserve Ratio, though the numerator is described as the amount of reserve at the beginning of the year, instead of at the end of the previous year in the case of Japan.

5.2 The United Kingdom

In the UK also some financial indicators are used for the National Insurance Fund.

(1) Contributory Support Ratio, Pensioner Support Ratio

The two financial indicators are used in the UK to show the maturity of pension plan on a head-count basis. One is the Contributory Support Ratio defined as "Number of Contributors per Pensioner", which is the same indicator used as the Pension Support Ratio in the US and Japan. The other one is the "Pensioner Support Ratio", defined as "Number of people at working ages per person over pension age", whose content is not the same as in the US and Japan.

(2) Cost Rate

The UK also uses the Cost Rate defined as "Pay-as-you-go contribution rate required to balance income and expenditure in the year".

(3) Fund Balance

Fund Balance is defined as "Balance of Fund at the end of the year as a multiple of expenditure in the year".

The Income replacement ratio is also used in the UK, which is defined as "Average weekly expenditure on retirement pension per retirement pensioner as a percentage of full-time adult weekly average earnings", but it does not indicate the financial situation of the pension plan, so it is not discussed here.

5.3 Canada

Some financial indicators are used for the Canada Pension Plan in Canada, which is a second tier earnings-related social security pension plan.

(1) Pension Support Ratio

We could not find a Pension Support Ratio for the Canada Pension Plan, so we used its projected figure for 2007.

(2) Pay-as-You-Go Rate

The Pay-as-You-Go Rate is used in the Canada Pension Plan, which is the ratio of expenditures to contributory earnings.

In Canada the first tier Basic Pension Plan is financed by general taxes. Therefore this indicator corresponds to the Own Payment Cost Rate = Comprehensive Cost Rate – the Basic Pension Cost in Japan.

The Pay-as-You-Go Rate of the Canada Pension Plan in 2004 is 8.29%. The Own Payment Cost Rate of EPI is 12.9% in Japan.

(3) Net Cash Flow, Shortfall

The Net Cash Flow is the difference between contributions and expenditure. This is the same indicator as the Annual Balance in the United States.

The Shortfall is the meaning of the Net Cash in case of deficit.

When the Net Cash Flow is negative in Canada they note how much of the investment earnings will cover the shortfall.

Exp/Rev Ratio is 68.2% in the Canada Pension Plan in 2004.

(4) Asset/Expenditure Ratio

The Asset/Expenditure Ratio is defined as the ratio of assets at the end of the year to the expenditure of the next year.

The Asset/Expenditure Ratio in Canada in 2003 (in 2004 if we translate into Japanese standard) is 2.84.

Table 4. Financial Indicators for the US, UK, Canada and Japan

	US	UK	Canada	Japan*
	(2004)	(2001-02)	(2004)	(2004)
PSR	3.31	3.32	3.48**	2.91
CCR	11	19.1	n.a.	17.8
E/R R	75.9	91.3	68.2	112.7
RR	3.2	0.4	2.84	5.2

Note: *=Employees' Pension Insurance

**projection for 2007

Table 4 shows some illustrative financial indicators for the US, UK, Canada and Japan. For the UK, PSR (Pensioner Support Ratio), CCR, E/R R and RR are figures for the National Insurance Fund. Pension Support Ratios for the US and the UK are almost the same, and almost equivalent to the PSP for Japan in 2000, which is now lower. This indicates that aging is progressed further in Japan.

The Comprehensive Cost Rate for Japan is lower than for the UK, but the Exp/Rev Ratio is more than 100%, so that it cannot be sustained by its own revenues at the moment.⁴

Table 4 also shows a higher figure of PSR and a lower figure of E/R R for Canada. This means that Canada has a younger and 'better' population for the Social Security Pension Plan than other countries. Japan has the reverse – a lower figure of PSR and a higher figure of E/R R.

6. Concluding Remarks

The Actuarial Subcommittee developed some financial indicators to evaluate the financial situation of the separate social security pension plans in Japan. The indicators are rather simple and can be calculated from normally available data. Japanese experience has shown that they have been useful for comparing the financial situation of the pension plans.

Similar financial indicators have been used in the US, UK and Canada. This would suggest that these financial indicators might be useful in other social security pension plans.

The financial indicators developed in the US, UK, Canada and Japan could in particular show well the maturity status of the pension plans. A package of indicators which show better the financial situation of social security pension plans as a whole, including maturity status, should be developed in the future.

In addition, we would like to propose establishing an international standard format of financial reporting and wording of financial indicators from our experience of studying for this paper. It was a hard job to read the financial reports and find financial indicators for our use. As the financial reports are very scheme-specific it is, of course, not so easy to understand them without sufficient knowledge of the pension plans. But the differences of reporting format and wording were other significant obstacles for our understanding, which we can say from our experience.

⁴ Though the Expenditure/Revenue Ratio was more than 100%, the Employees' Pension Insurance did not show a deficit as the returning reserve from dissolved Employees Pension Funds was included in the Revenue of the Employees' Pension Insurance.

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Appendix 1. Chronological List of Japanese Social Security Pension Systems' Foundations and Developments

(Foundations of Social Security Pension Plans)

Late 19th Century: Pension Plans for Armed Force or Government Officers

Early 20th Century: Mutual Aid Associations for Workers at Public or Private Factories and Enterprises

1942: Laborers' Pension Insurance

1944: Employees' Pension Insurance(renamed)

1961: National Pension Plan(Universal Pension System)

(Improvement of Plans)

1965: 10,000 yen Retirement Pension Benefit

1969: 20,000 yen Retirement Pension Benefit

1973: 50,000 yen Retirement Pension Benefit, Cost of Living Adjustment, Reassessment of Remuneration

(Measures for Arrival of Aging Society)

(1980.10: The Actuarial Subcommittee, Social Security Council, Prime Minister's Office)

1985: Basic Pension System, Raising of Pensionable Age of Women for Old-Age Pension, Decrease of Benefits and Increase of Contributions

1989: Full Automatic Price Indexation

1990: Financial Interchange Program among Employees' Pension Plans

1994: Raising of Pensionable Age for Old-Age Pension, Disposable Income Indexation

1997: Basic Pension Number, Integration of three mutual aid associations (Japan Railway, Japan Tobacco and Nippon Telegraph and Telephone) into Employees' Pension Plan

(From Benefit-Oriented to Contribution-Oriented System)

2000: Full remuneration-based system(including bonus), Decrease of benefit level

2001: The Actuarial Subcommittee, Social Security Council, Ministry of Health, Labor and Welfare

: Defined Contribution Pension Act

2002: Defined Benefit Corporative Pension Act

Consolidation of the Mutual Aid Association for Agriculture, Forestry and Fishery Cooperative Employees' Pension Plan

2004: Raising the portion of state subsidy for basic pension from 1/3 to 1/2, Fixing premium level, Adjustment of indexation, Division of Employees' Pension upon Divorce

Appendix2. Cabinet Decisions and Financial Assessment Reports (Published by The Committee of Actuaries, Social Security Council, Prime Minister's Office and The Committee of Actuaries, Social Security Council, Ministry of Health, Labor and Welfare)

1984:Cabinet Decision: Social Security Pension Plans should be secured and developed consistently in accordance with socio-economic change including aging society

1984 : The First Report: How to use actuarial science for social security pensions. What should be kept in mind for deciding contribution (rate) in social security pension plan.

1988 : The Second Report: Standardized methodology to evaluate each pension plan contribution level

1992: The Third Report: Unified models

1993 : The Fourth Report: Projected number of insured should be consistent with population projection as a whole. Common standards should be applied for financial planning in each plan.

1996:Cabinet Decision: Pension plans should have stability and equity. Evaluation should be made at each evaluation year pension plan on, stability and equity.

1998: The Fifth Report: Social security pension plans should not be discussed only from the viewpoint of generational equity, but extreme inequality should not be preferable from the viewpoint of plan sustainability and stability.

2000: Financial Assessment: On the 1999 evaluation in each employees' pension plan.

2001 : Cabinet Decision: Pension plans should have stability and equity in accordance with changes of job structure and plan maturity. Financial reports should be made annually in addition to the evaluation year on the stability and equity. Discussion should be made on the contributions from an actuarial viewpoint.

2002: Financial Assessment Report: Reports on the current financial situation on each social security pension plan on the reports submitted to the Committee of Actuaries.

2003: Financial Assessment for Transferred Value: Evaluation of transfer values on the consolidation of the Mutual Aid Association for Agriculture, Forestry and Fishery Cooperative Employees' Pension Plan to Employees' Pension Insurance.

2006: Financial Assessment: On the 2006 evaluation in each employees' pension plan. Cabinet Decision: Social security pension plans should increase plans' stability by expanding financial units for future low fertility and aging. They also increase people's credibility by attaining the same benefit level with same contribution level among all

plans, including those for government and private workers.