



# Joint Colloquium of the IACA, PBSS and IAAHS Sections of the International Actuarial Association

Westin Copley Place Hotel, Boston, U.S.A. – 4-7 May 2008

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

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# 1.Introduction

- 1970s-8 plans,27insurers
- ASC established in 1980
- 1984-CD-NPP to be expanded
  - To be unified by 1995  
(later changed to be unified in 2010)
- ASC's new roles-long-term financial stability & balanced development in the light of unification
- ASC- unique challenge
  - developed financial indicators

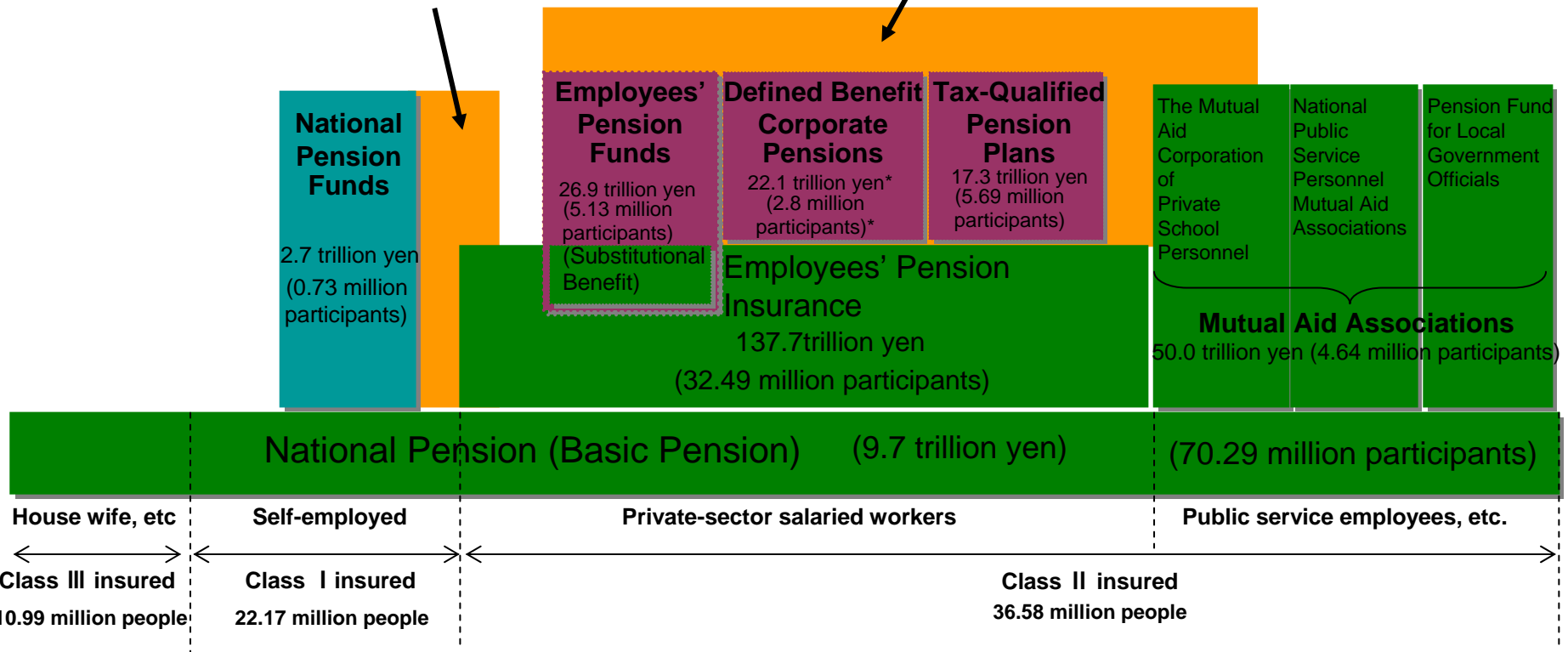
## 2. Financial Indicators

- (1) Pension Support Ratio
- (2) Comprehensive Cost Ratio
- (3) Basic Pension Cost Rate and Independent Benefits Cost Rate
- (4) Expenditure/Revenue Ratio
- (5) Reserve Ratio
- (6) Pension Type Cost Rates

# Structure of the Japanese Pension Schemes

**Defined Contribution Pensions (Individual type)**  
**(0.063 million participants)**

**Defined Contribution Pensions (Corporate type)**  
**(1.733 million participants)**



Notes:

- The number of participants and reserves are as of the end of March, 2005. \* is as of July, 2006.
- Defined Contribution pensions took effect on October 1, 2001. Defined-Benefit Corporate Pensions took effect on April 1, 2002. Tax-Qualifies Pension Plans (17.3 trillion yen, 5.96 million participants) will change over to other Company Pension Plans etc till March, 2012.

Source: Ministry of Health, Labour and Welfare. Pension Fund Association

# (1) Pension Support Ratio

**Pension Support Ratio**

**= “Number of Insured”**

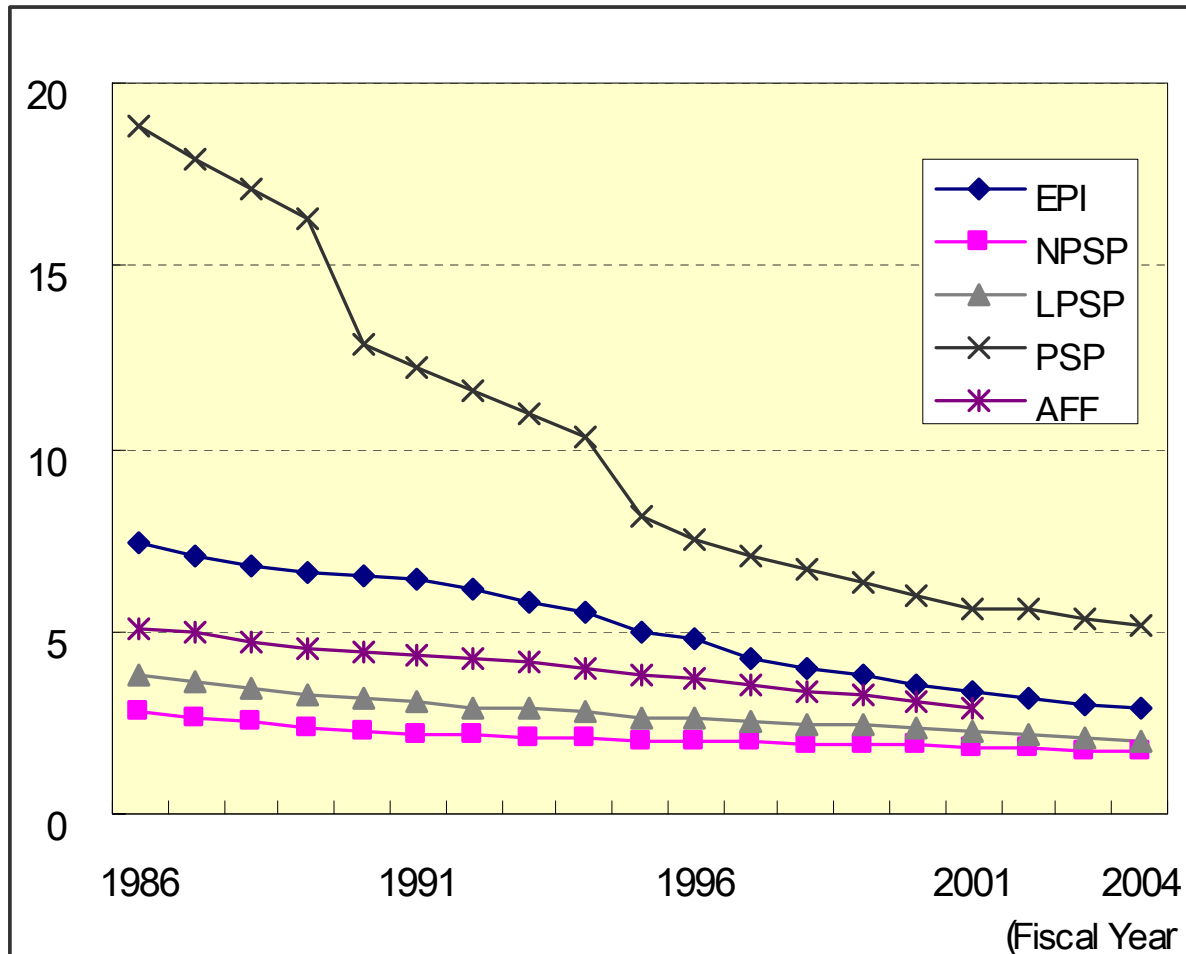
**/”Number of Old-age Pensioners restricted  
to long-term contributors “**

**(cf) The number of Beneficiaries per 100**

**Covered Workers (USA)**

**Contributory Support Ratio (UK)**

# (1) Pension Support Ratio



## (2) Comprehensive Cost Ratio

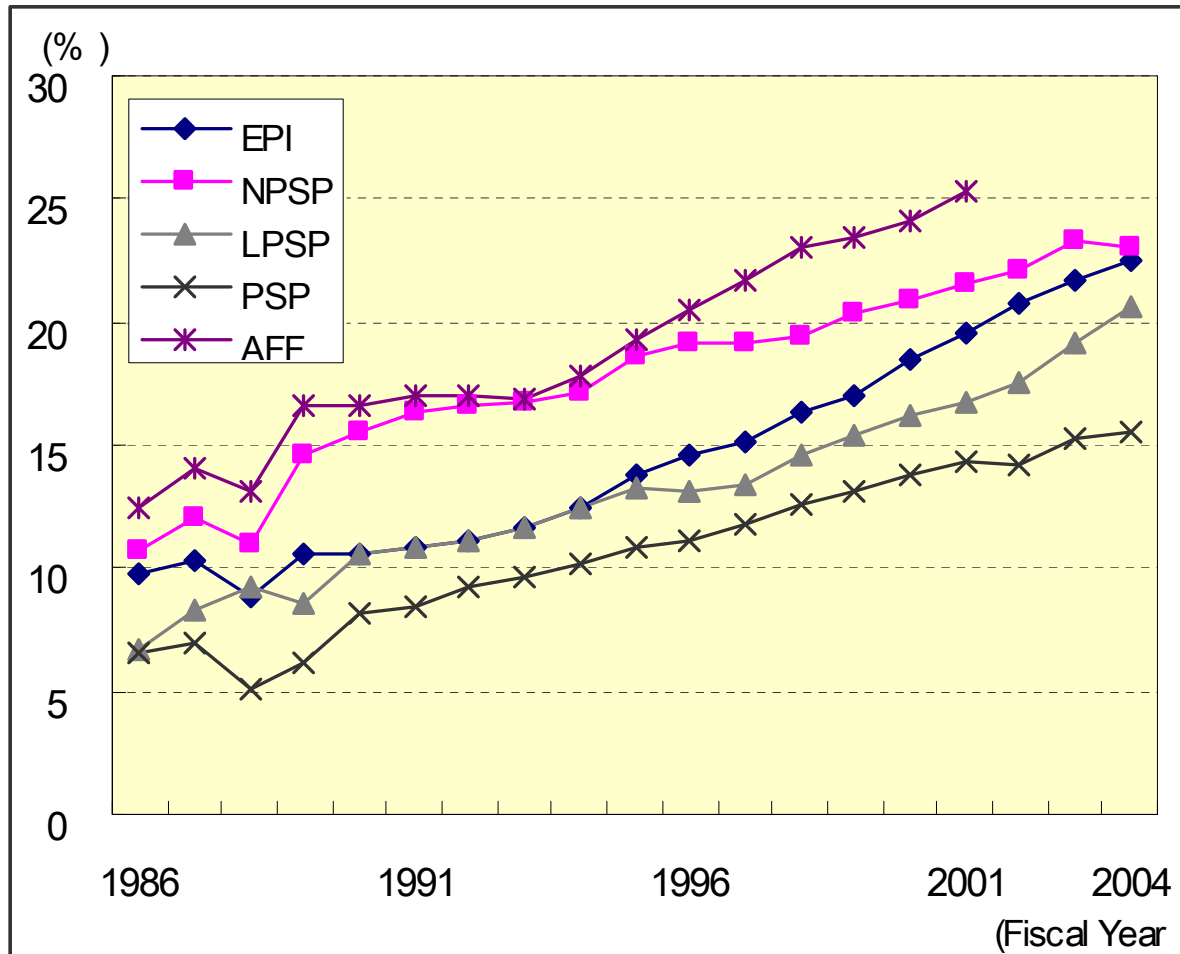
Comprehensive Cost Rate

$$= \frac{\text{"Actual Expenditure – State subsidies"}}{\text{"Total Remuneration"}} \times 100 (\%)$$

(cf) Cost Rate (USA,UK)

Pay-as-you-go-rate (Canada)

## (2) Comprehensive Cost Ratio



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

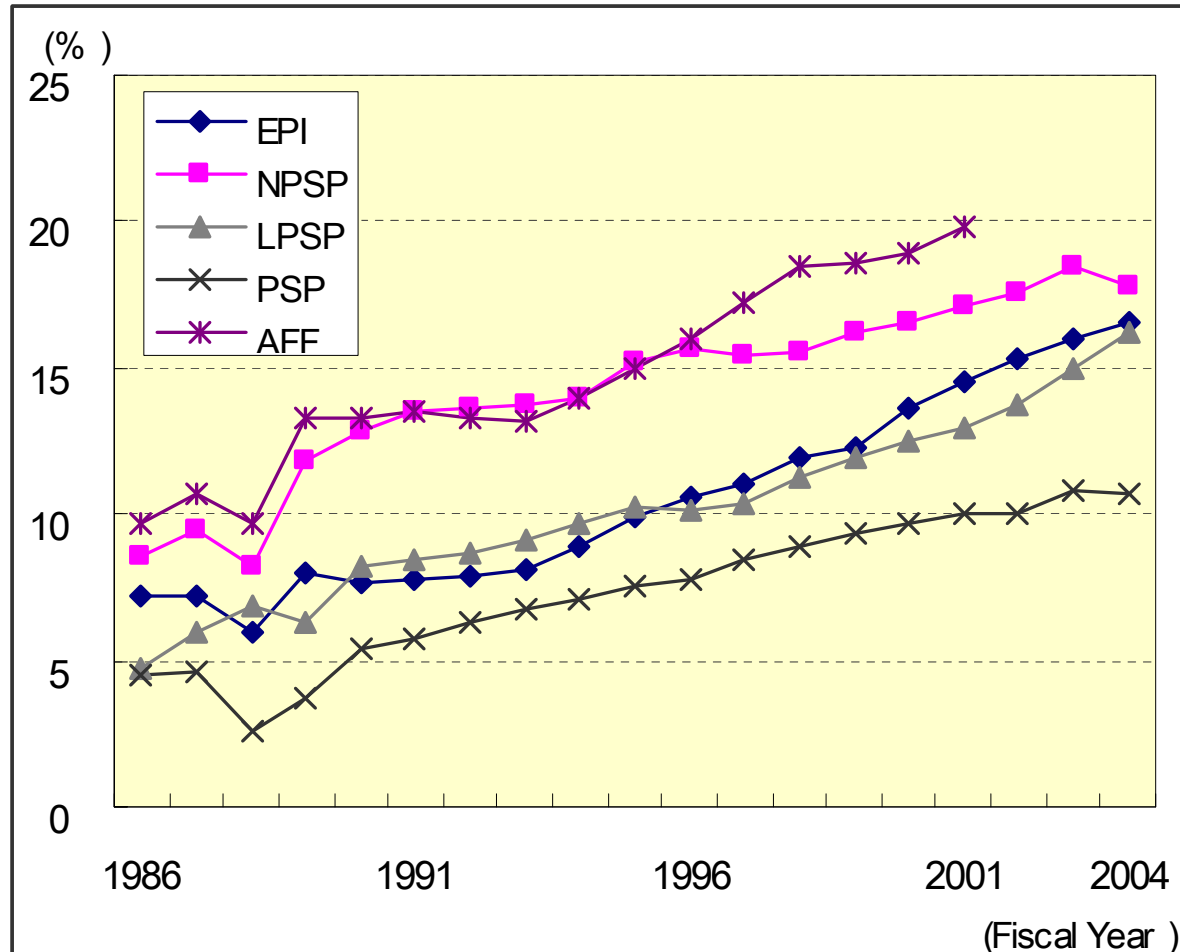
#### **Basic Pension Cost Rate**

**= Contribution to the Basic Pension Plan  
( excluding State subsidies )  
/ Total Remuneration × 100(%)**

#### **Independent Benefits Rate**

**= (“Actual Expenditure – State subsidies”  
– Contribution to Basic Pension Plan ( excluding  
State subsidies ) )  
/ Total Remuneration × 100(%)**

### (3) Independent Benefits Cost Ratio



## (4) Expenditure/Revenue Ratio

Exp/Rev Ratio

$$= \frac{\text{“Actual Expenditure – State subsidies”}}{(\text{Contributions} + \text{Investment income})} \times 100(\%)$$

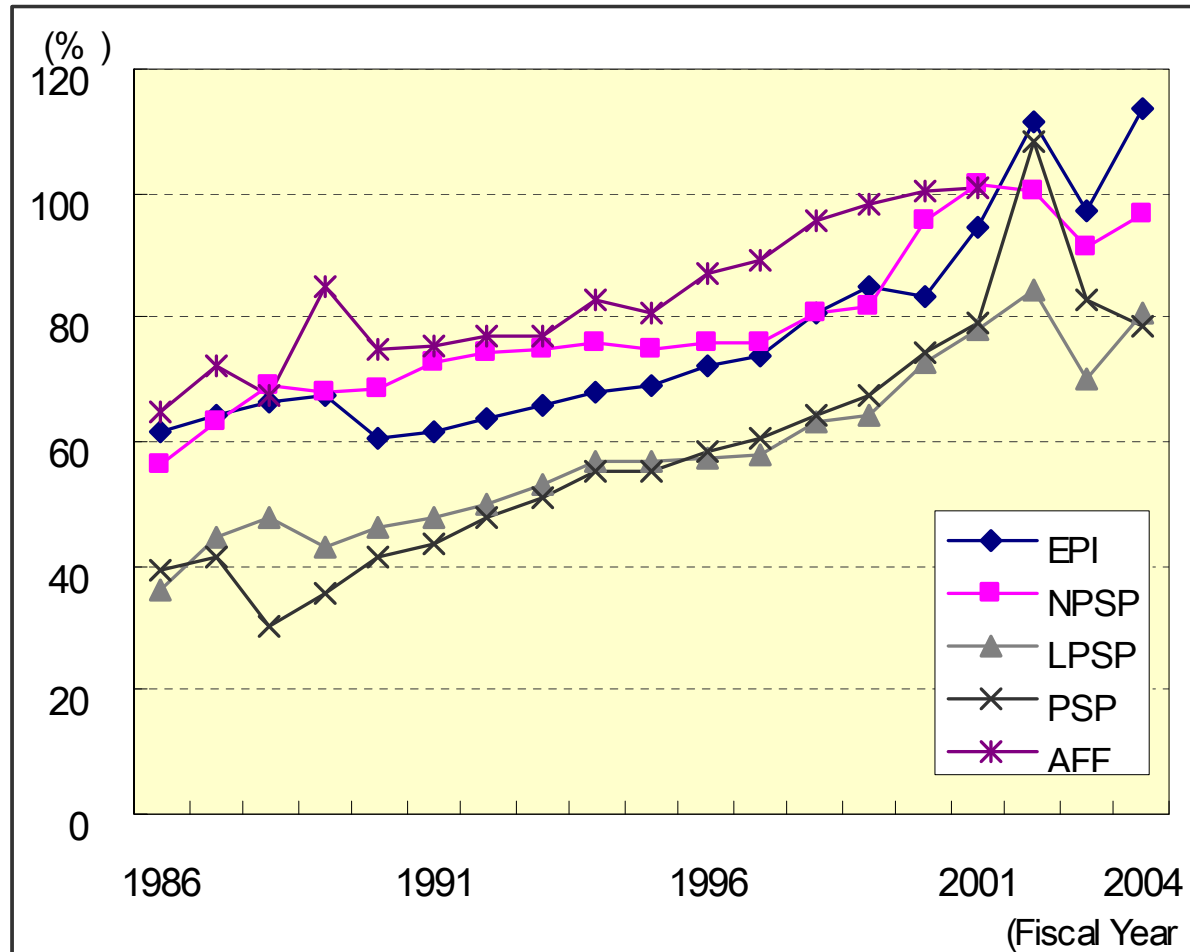
(cf) Annual Balance (USA)

=Income Rate (excluding Investment income) – Cost Rate

Net Cash Flow (Canada)

=Contributions - expenditures

## (4) Expenditure/Revenue Ratio



## (5) Reserve Ratio

Reserve Ratio

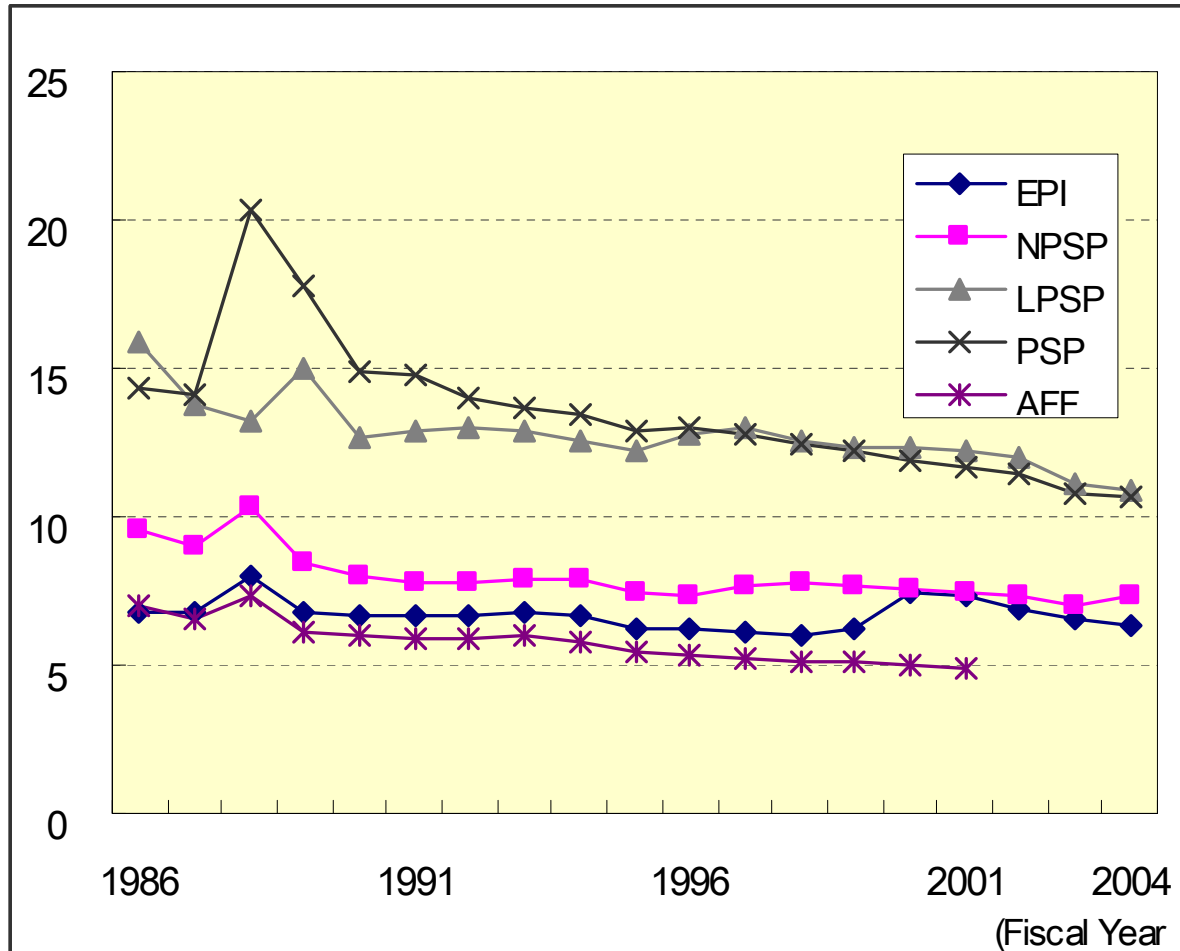
= "Reserve at the End of the Previous Fiscal Year "  
/ (Actual Expenditure – State subsidies)

(cf) Trust Fund Ratio (USA)

Fund Balance (UK)

Asset/Expenditure Ratio (Canada)

## (5) Reserve Ratio



## (6) Pension Type Cost Rates

### Old-Age Pension Cost Rate

= Old-Age Pension Benefits included in  
“Actual Expenditure – State subsidies”  
/ Total Remuneration ×100(%)

### 3. Financial Indicators for the US, UK, Canada & Japan

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

	US (2004)	UK (2001-02)	Canada ( 2004 )	Japan* (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

## 4. Concluding Remarks

- The Actuarial Subcommittee developed some financial indicators to evaluate the financial situation of the separate social security pension plans in Japan.
- 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.
- Financial reports are very difficult to read because they need sufficient knowledge of pension plans and differences of reporting format and wording.

**THANK YOU !!!**

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