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Taiwan Old-Age Security Systems: Equity and Sustainability Implications

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1. *Overview of the Old Age Security Systems in Taiwan*

- The old-age security systems in Taiwan are designed by work force segments.
- Each segment offers different type of social insurance plus its corresponding occupational pension system.
- There are basically five types of old-age security systems in Taiwan.

Table 1. Old-Age Security Systems in Taiwan

	public servants	public school personnel	military personnel	private school Personnel	private business employees
Covered Participants	**280,638***	**201,004***	**112,556***	**63,000****	**8,408,345*****
Social Insurance Old-Age Benefits	**Civil Servants and Teachers social insurance**		**Military Personnel Insurance**	**Civil Servants and Teachers social insurance**	**Labor Insurance**
Occupational Pension System	**New Public Service Pension Fund System (NPSPF)**			**Private School Pension Fund System**	**Labor Pension Plan by New Pension Act /Labor Standard Law**

Source:*statistics from New Public Service Pension Fund System 3rd Actuarial Report; **statistics from Private School Pension System 3rd Actuarial Report; ***statistics from Labor Insurance Financial and Actuarial Report.

2. *Design of the NPSPFS--background*

- NPSPFS has been operating since July of 1995
- Superseding old non-contributory PSPFS which was established in 1940s and was a plan fully financed by government budget.
- Management Board of Public Service Pension Fund (MBPSPF) under Ministry of Civil Service was established and will pay the pension benefits for service years after new system established.
- Due to its contributory design, NPSPFS offers much richer benefits than old PSPFS to seek supports from participants.

2. *Design of the NPSPFS--features*

- a defined benefit plan, provides death benefits, disability benefits, survivor benefits and retirement benefit .
- Voluntary retirement :25 service year or age 60 and above with 5 service years .
- Retirement benefits: life time annuity, lump sum and flexible combination .
- lump sum=(2*final base salary)*SY*1.5, Annuity= =(2*final base salary)*SY*2%
- supplemental annuity + system-transit compensating bonus annuity
- 18% deposit rate for social insurance

Table 2: Estimated replacement ratios of public servants by position rank and service years (Unit: NT$)

Employee Rank	SY prior NPFPS	SY after NPFPS	actual wage (1)	personal tax rate (2)	net wage (3) =(1)*(1-(2	monthly annuity* (4)	replacement ratio (5)=(4)/(3)
higher rank	20	15	104,125	20%	83,300	98,919	119%
	15	15	104,125	20%	83,300	93,713	113%
	0	30	104,125	20%	83,300	68,498	82%
lower rank	20	15	81,809	17%	67,901	77,719	114%
	15	15	81,809	17%	67,901	73,629	108%
	0	30	81,809	17%	67,901	67,716	100%

Source: author's calculation

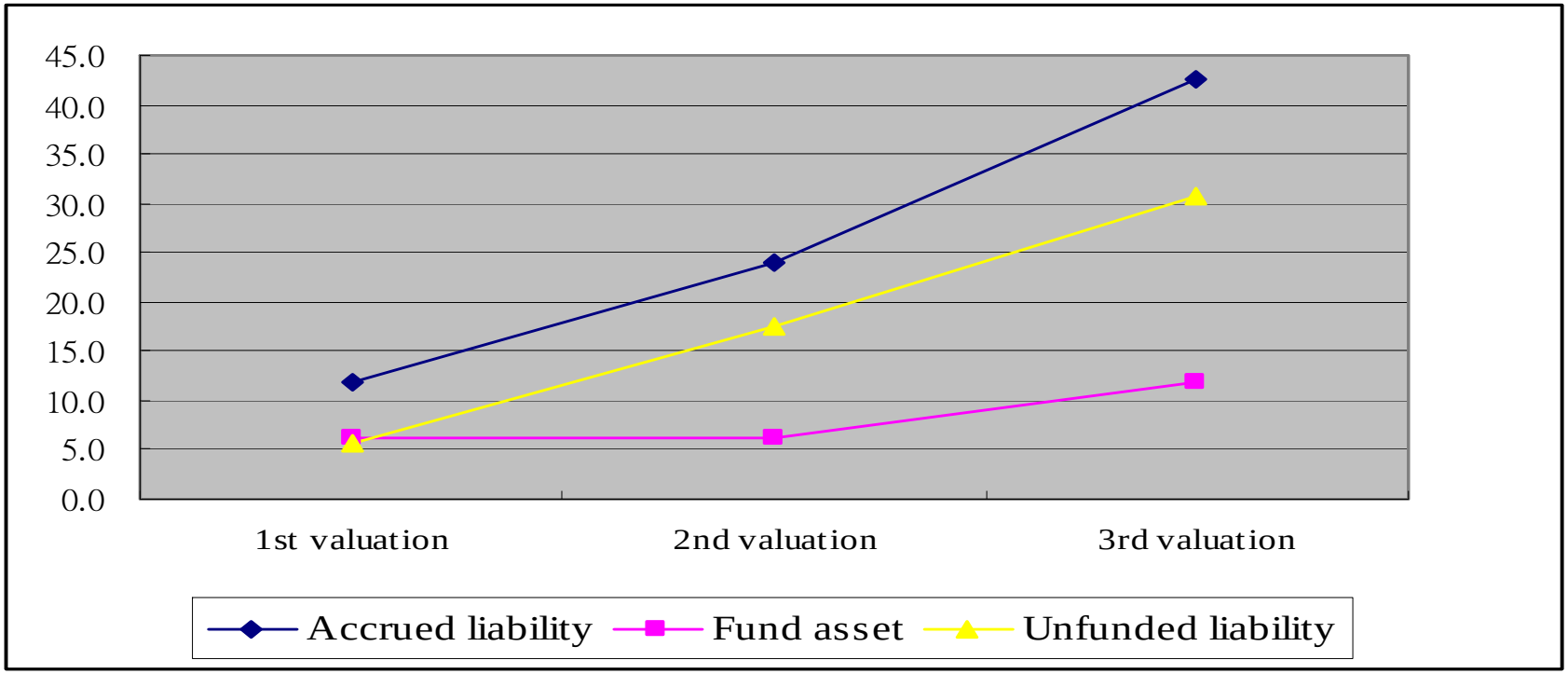
2. *Design of the NPSPFS--ambiguousness*

- MBPSPF: financial self-sufficiency is the final goal of fund management.
- Public Servant Pension Act: if system financial insolvency incurs, it will be from national budget to make up the shortage.
- The ambiguousness of final financial responsibility leaves the system stumbling into indecision and worsens its financial status.

3. Injustices Implications of NPSPF—within system

Financial Status of NPSPFS (US$ billion)	1st valuation	2nd valuation	3rd valuation
Accrued liability	11.78	23.88	42.57
Fund asset	6.23	6.23	11.76
Unfunded liability	**5.55**	**17.65**	**30.81**
Normal Cost	15.5%, 17.9%, 21.9%	26.4%, 28.6%, 32%	31.1%, 33.1%, 36.3%
Actual Contribution Rate	8.8%	9.8%	10.8%

Figure 1. The pattern of accrued liability, fund asset and unfunded liability of NPSPFS



Year	Public Servants	School	Military
Negative cash flow	In 12 years	In 10 years	This year
Solvency Year	In 22 years	In 19 years	In 9 years

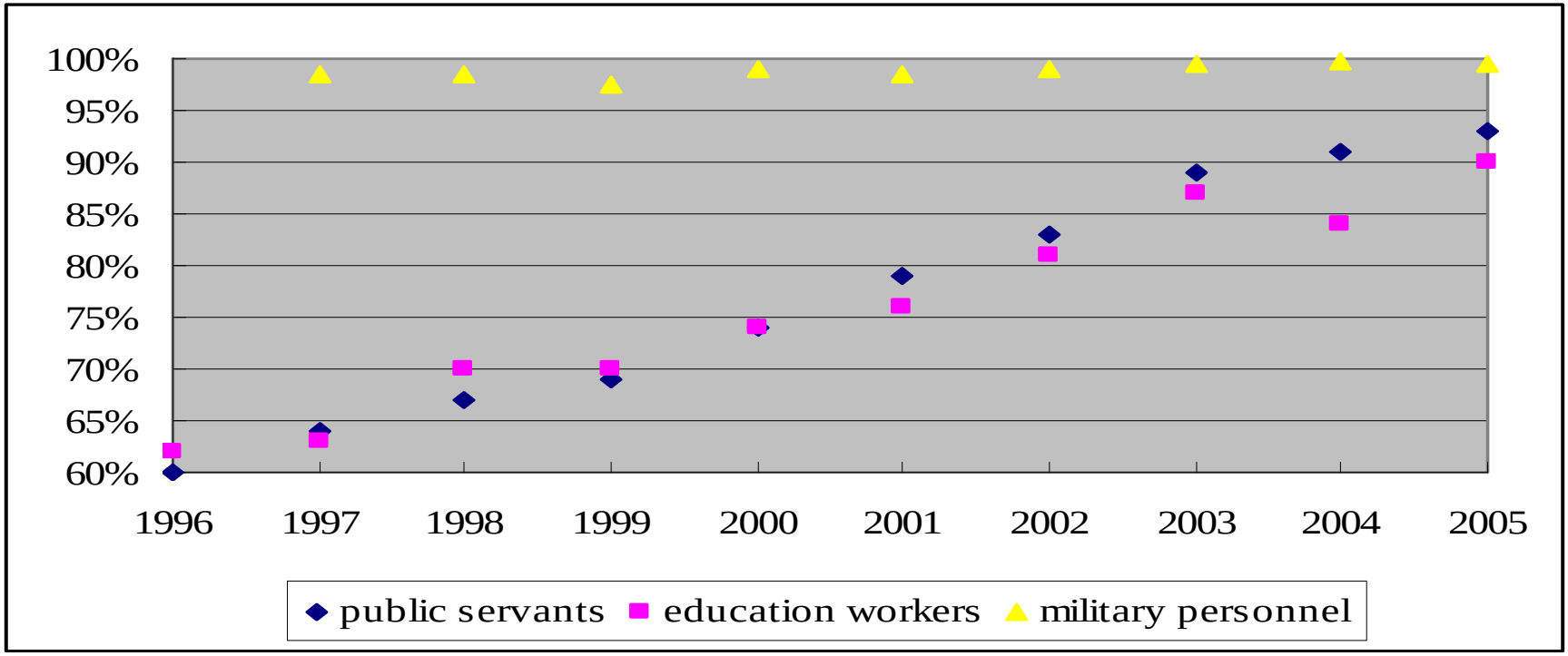
Reason 1: the investment environment gets more challenges

The average 2-year deposit rates and yields of NPSPF

Year	2-Year Deposit Rate (A)	NPSPF realized annul nominal yield (B)	(C) = (B) – (A)	Inflation Rate (D)	NPSPF realized annual real yield (E) = (B) – (D)
1996	6.93%	7.784%	0.854%	3.07%	4.71%
1997	6.292%	12.42%	6.128%	0.90%	11.52%
1998	6.313%	9.119%	2.806%	1.68%	7.44%
1999	5.846%	8.181%	2.335%	0.18%	8.00%
2000	5.142%	9.973%	4.831%	1.25%	8.72%
2001	4.016%	4.72%	0.704%	-0.01%	4.73%
2002	2.246%	2.594%	0.348%	-0.20%	2.79%
2003	1.567%	1.946%	0.379%	-0.28%	2.23%
2004	1.496%	2.628%	1.132%	1.61%	1.02%
2005	1.812%	3.661%	1.849%	2.31%	1.35%
2006	2.419%	4.446%	2.027%	0.6%	3.85%
2007	2.439%	5.617%	3.178%	1.8%	3.82%

Reason 2: plan design fraud

1. **Absence of reduced annuity design**
2. **Lack of actuarial equivalence between lump sum and annuity amount (3.3 times @age 55)**



Reason 3: Indecision leads to rapid accumulation of unfunded liability and interest cost

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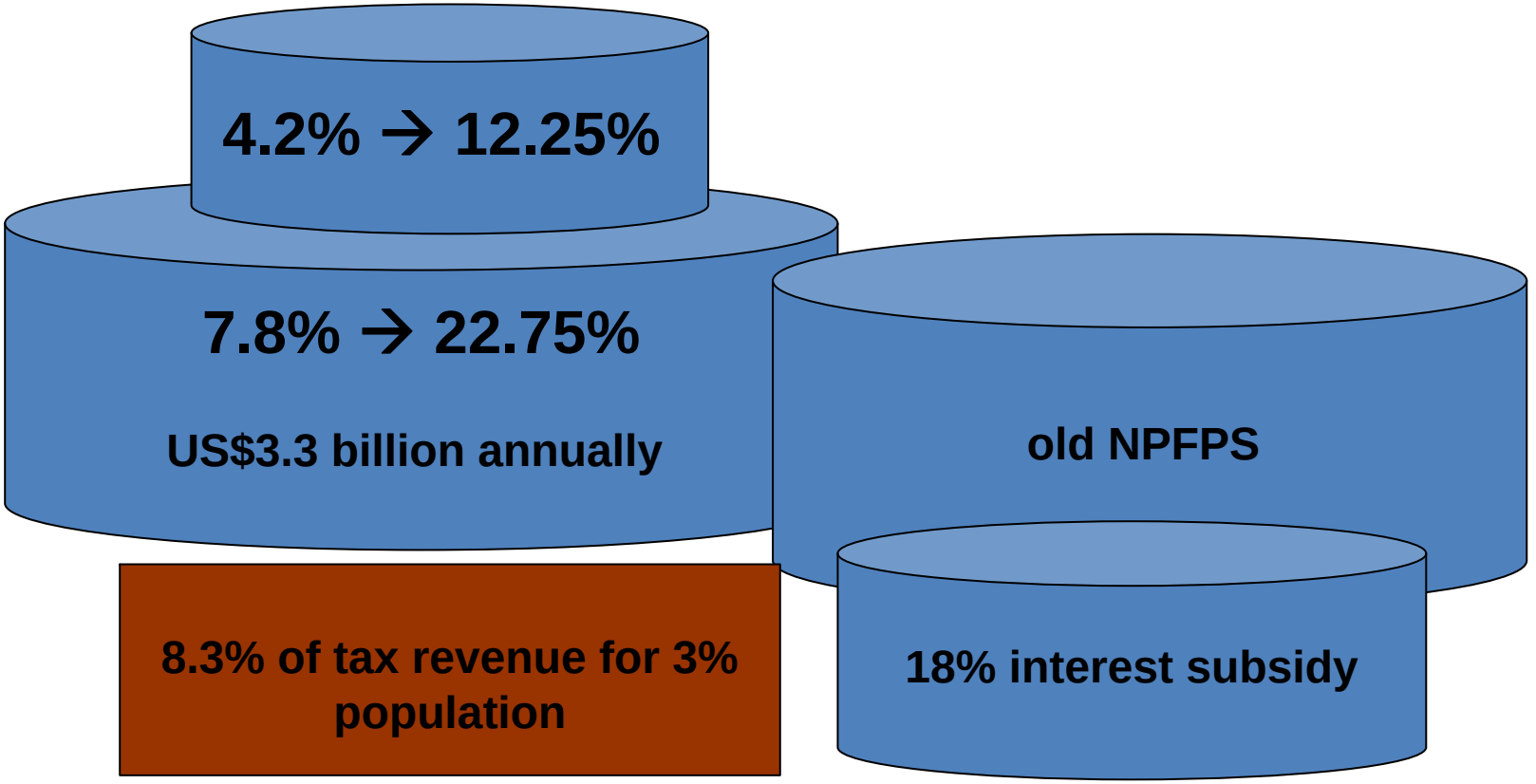
3. Injustices Implications of NPSPF—between systems

Fully Funded ??



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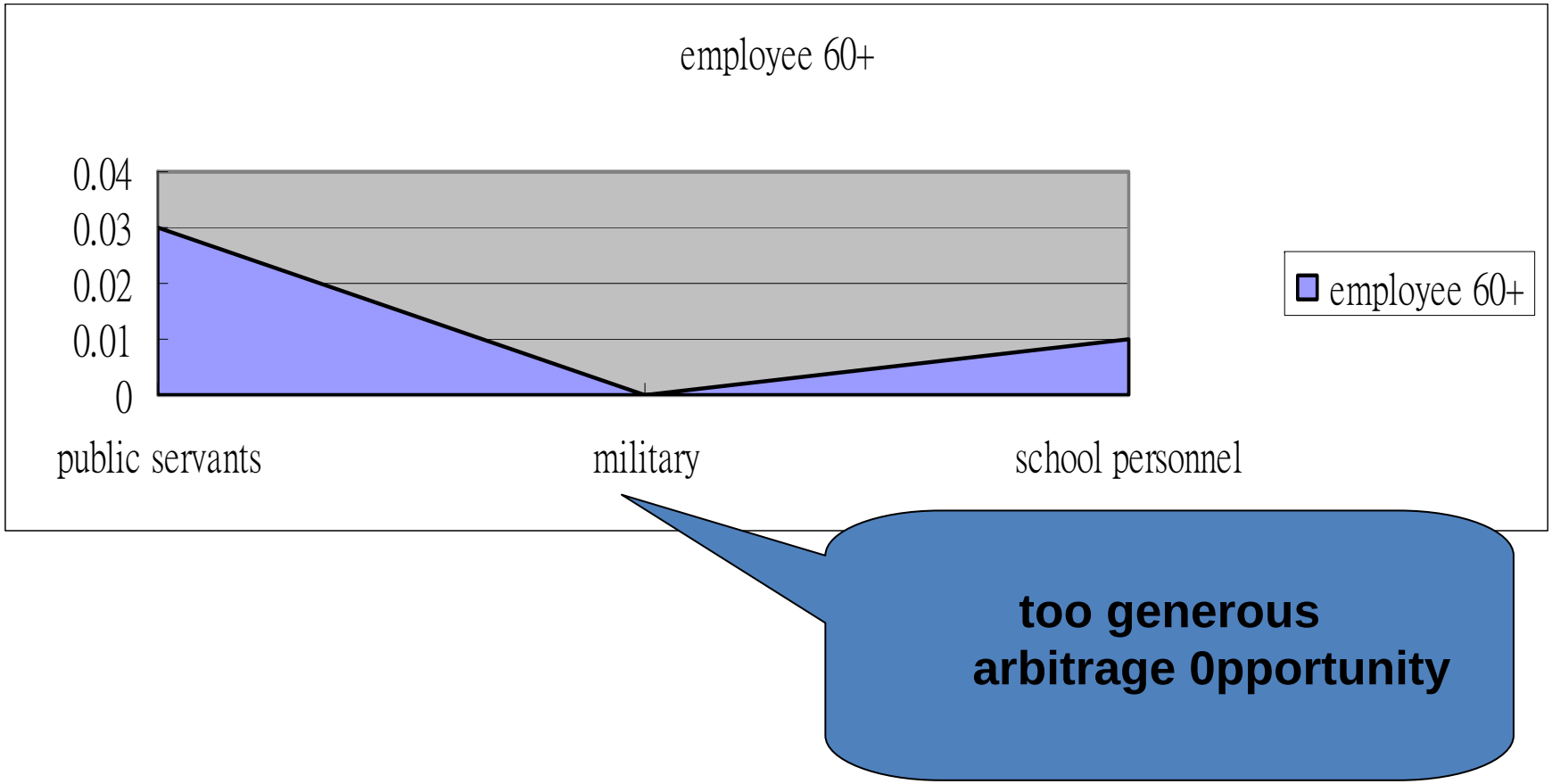
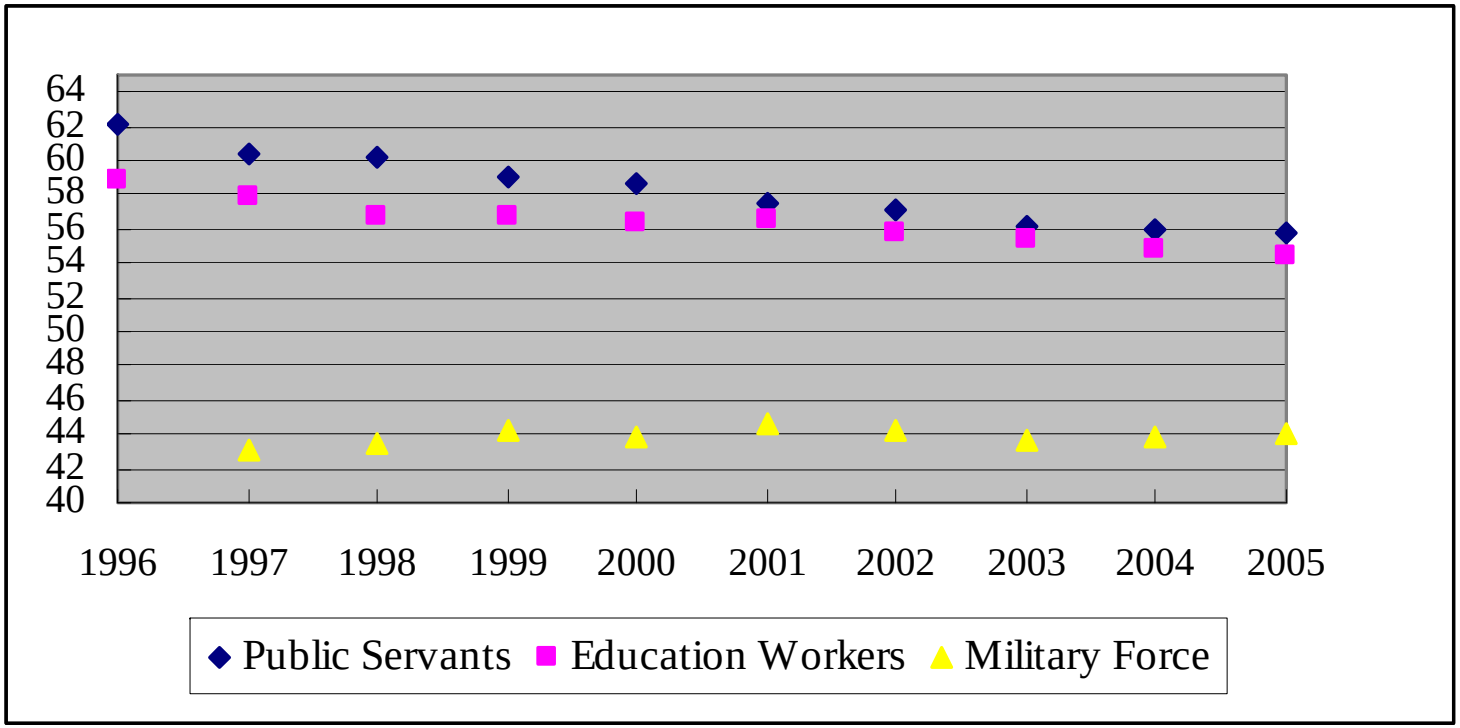


Figure 3.
Decreasing retirement age for general public sector employees



Sources: NPSPFS actuarial reports.

Table 4.
Retirement age changes to pension benefits by country

Country	Changes to pension age
Australia	Phased rise in pension age for women from 60 to 65 by 2013
France	Minimum contribution duration rising from 37.5 to 40 years, reducing chance of retiring at 60.
Germany	Women's pension age rising from 60 to 65 by 2014. Actuarial reductions being introduced for retirement before 65.
Japan	Age for first receipt of basic pension rising from 60 to 65 between 2001 and 2013.
New Zealand	In process of rising from 60 to 65, to reach 2001.
UK	Women's pension age to rise from 60 to 65 between 2010 and 2020.
US	Rising from 65 to 2009 and to 67 by 2027.

Source: Richard Disney and Paul Johnson (2001)

3. Injustices Implications of NPSPF—between systems

	Labor Standard Law	New Pension Act
Level of Contributions	2% to 15% of a worker's monthly wage is to be deposited in a pension reserve fund	Employer at least 6% of worker's wage; Workers voluntarily contribute maximum 6% to their pension accounts
Basis used for calculating pension payments	Average wage (6 months prior to retirement)	Monthly wage (determined by the Table of Monthly Contributions for Labor Pension)
Conditions for receiving pension payments	seniority of 25 years or having 15 years and 55 years of age	Age of 60
Standards of benefits	[(1-15 years) x 2 units + (16 th year - x year) x 1 unit] ≤ 45 units	Accumulated principal and interest

3. Injustices Implications of NPSPF—between systems

too much superior to other systems

	Public	Private (Business Unit)
SY (years)	30	30
Replacement Ratio (2^{nd} Layer)	At least 60% adjusting with CPI	14% + 7% (5% average yield, 2.5% annualized yield), not adjusting with CPI

over-superiority

4. Reforming the NPSPFS

- Modify the current benefits:

1) 1% replacing 2% of replacement rate
2) Strengthening full annuity criteria plus reduced annuity
3) Amortize the unfunded liability
4) Rate adjustment mechanism

- Establish Hybrid Plan: BBP + TSP
- Establish Cash Balance Plan
- Integrate the public with the private

5. Conclusions

- NPSPFS :

1) overpayment
2) Lack of reduced annuity design and earning test
3) Unfair to participants aged below 40
4) Inequity between public and private

- Solutions

1) Fully funded or reduce benefits ?
2) Establish a self-responsible new system