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1. Public Policy Making in Development Context

• Development Syndrome

Making public policies depends on the stages of economic development. Along with economic growth, there comes a certain stage of economic development where policy makers will face “particular” problems both at expenditure and revenue sides.

• Expenditure side:
Policy makers feel pressed with offering better welfare packages to meet the expectation of the people: “we have worked hard enough, our economy has achieved development, and now is the time of more compensation.”

• Revenue side: Indirect taxes, most typically the value-added tax, and corporate-income taxes mostly on big firms alone cannot finance expenditures. Taxing personal income becomes necessary.
• Purpose of this lecture:
  - Focusing on the expenditure side, we will present the experiences of Japan’s development syndrome and show the issues for making social security policies.
  - The importance of separation of insurance and redistributive aspects of public pension is stressed.
  - Unfunded liability (excess of benefits over contribution at the present value) should not be shouldered by younger generations.

2. Social Security: Public Pension

2.1 The Case of Japan

Three basic concepts of public pensions

1) **Coverage: universal or not**
   Coverage usually spreads from the government’s employees and the workers in business sectors to the self-employed. When every person is enrolled in the pension system, it is called universal.

2) **Financing the benefits**
   - **Funded system** is like an individual pension plan where he/she contributes and receives benefits based on actuarial calculations.
   - **Unfunded or “PAYG (pay-as-you-go-financing)” system** finances benefits by transferring income of the young to the old.
3) Who takes the risks?

When benefits are fixed (with proper price indexing), future risks are taken by the insurer. This is called Defined-Benefits pension. On the other hand, when contributions are fixed first, risks about benefits are borne by contributors. This is called Defined-Contributions pension.

Japanese experiences (1)

A characteristic of Japanese social security policy throughout its high growth period (1950-73) was that the government was not big. Social expenditure was focused mainly on education and basic health care, and thus it aimed more at social stabilization and economic growth than the establishment of a welfare state. Issues such as when the nation would be able to rebuild after the devastation of World War II, how to raise savings, and how to finance investment preoccupied the minds of those contemplating the future of the country. And the public was busy, too, in working their way to a better life.

However, a sharp change in social security policy took place at the beginning of the 1970s. Along with the increase in their incomes, people in Japan became more conscious of quality of life issues, exemplified most clearly by concerns about the environment. Social welfare was not an exception, and a call for better welfare was turning into a movement. Better welfare meant more government commitment to medical care and public pensions. In retrospect, these calls rested on an optimistic view that economic growth would continue and that the government would be able expend considerable energy in the service of its people and the welfare system the public deserved.

The year 1973 was declared by the government to be “the inaugural year of welfare,” and extremely liberal provisions were offered in every aspect of social expenditure, including medical care and public pension. Overlooked in all this euphoric movement, however, was that the Japanese economy had turned a corner.
Japanese experiences (2)

- **Universal system**: Public Pensions was extended to the self-employed, mostly peasants and small businesses, **in 1961**.
- **Broadly two public pension systems with defined benefits**: First for the employed, both at private and public sectors. Second for the self-employed, National Pension System.
Japanese experiences (4)

- Expansion of Benefits of Employees’ Pension

**Figure 3.** Average Benefits of the EPI, Average Wages and Consumer Price Index (1970 – 1993)

Wages, too, increased gradually over the years, but pension benefits surpassed their ascent. The numbers in figure 3 show this: while pension benefits and wages started from 100 in 1970, they reached 1190.1 and 518.7, respectively, in 1993. One reason for this increase in benefits was the huge upsurge in the 1970s, but another

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Japanese experiences (5)

**Consequences of overpayments (Employees’ Pension):**

<table>
<thead>
<tr>
<th>Year of Birth</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911</td>
<td>14.07</td>
<td>7.11</td>
</tr>
<tr>
<td>1915</td>
<td>13.56</td>
<td>9.63</td>
</tr>
<tr>
<td>1920</td>
<td>11.59</td>
<td>8.57</td>
</tr>
<tr>
<td>1925</td>
<td>12.26</td>
<td>16.65</td>
</tr>
<tr>
<td>1930</td>
<td>7.70</td>
<td>13.16</td>
</tr>
<tr>
<td>1935</td>
<td>5.45</td>
<td>10.74</td>
</tr>
<tr>
<td>1940</td>
<td>5.57</td>
<td>10.17</td>
</tr>
</tbody>
</table>

Table 4. Life-time Benefit-To- Contribution Ratio

<table>
<thead>
<tr>
<th>Year of Birth</th>
<th>BC</th>
<th>B + BC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924</td>
<td>7.70</td>
<td>6.32</td>
</tr>
<tr>
<td>1928</td>
<td>3.70</td>
<td>3.07</td>
</tr>
<tr>
<td>1932</td>
<td>2.08</td>
<td>1.80</td>
</tr>
<tr>
<td>1936</td>
<td>1.40</td>
<td>1.14</td>
</tr>
<tr>
<td>1940</td>
<td>1.11</td>
<td>0.90</td>
</tr>
<tr>
<td>1944</td>
<td>0.90</td>
<td>0.76</td>
</tr>
<tr>
<td>1948</td>
<td>0.83</td>
<td>0.69</td>
</tr>
<tr>
<td>1952</td>
<td>0.83</td>
<td>0.66</td>
</tr>
</tbody>
</table>

Note: B: Lifetime discounted value of benefits. C: Contributions.
Japanese experiences (6)

Expansion of Benefits of The Self-Employed

Figure 5. Average Benefits of the National Pension and Consumer Price Index


Japanese experiences (7)

Consequences of overpayments
(The Self-Employed Pension):

Table 8. Lifetime Benefit-to-Contribution Ratio: The National Pension Plan

<table>
<thead>
<tr>
<th>Year of birth</th>
<th>Men</th>
<th>Women</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1907</td>
<td>62.81</td>
<td>103.82</td>
<td>39.31</td>
<td>52.90</td>
</tr>
<tr>
<td>1908</td>
<td>67.33</td>
<td>105.30</td>
<td>45.18</td>
<td>54.40</td>
</tr>
<tr>
<td>1909</td>
<td>73.10</td>
<td>117.28</td>
<td>48.52</td>
<td>59.01</td>
</tr>
<tr>
<td>1910</td>
<td>76.24</td>
<td>123.17</td>
<td>51.80</td>
<td>60.52</td>
</tr>
<tr>
<td>1911</td>
<td>80.64</td>
<td>124.76</td>
<td>55.09</td>
<td>62.51</td>
</tr>
</tbody>
</table>

Table 9. Lifetime Benefit-to-Contribution Ratio: The National Pension Plan

<table>
<thead>
<tr>
<th>Year of birth</th>
<th>B/C</th>
<th>(B-T)/C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1924</td>
<td>10.63</td>
<td>7.08</td>
</tr>
<tr>
<td>1934</td>
<td>4.93</td>
<td>3.29</td>
</tr>
<tr>
<td>1944</td>
<td>2.72</td>
<td>1.81</td>
</tr>
<tr>
<td>1954</td>
<td>1.70</td>
<td>1.13</td>
</tr>
<tr>
<td>1964</td>
<td>1.28</td>
<td>0.85</td>
</tr>
<tr>
<td>1974</td>
<td>1.11</td>
<td>0.74</td>
</tr>
<tr>
<td>1984</td>
<td>0.94</td>
<td>0.62</td>
</tr>
<tr>
<td>1994</td>
<td>0.94</td>
<td>0.62</td>
</tr>
</tbody>
</table>
2.2 Discussions

1) Attractions and Pitfalls of Pay-As-You-Go financing

A formula of contribution rate:

- Contribution rate =
  \[
  \text{Benefits per receiver} \times \frac{\text{Number of beneficiaries}}{\text{Number of contribution payers}}
  \]

- Benefits per receiver = replacement ratio \times \text{average wages}

Illustration:

- average wage of the presently young worker = w
- replacement ratio = 60%
- the number of workers (contributors) = 100
- the number of retired (pension receivers) = 50

\[
\text{Contribution rate} = 60\% \times w \times \frac{50}{100} \\
= 30\% \times w
\]

Formula of contribution rate:

- Contribution rate = Benefits per receiver \times \frac{\text{Number of beneficiaries}}{\text{Number of contribution payers}}
- Benefits per receiver = replacement ratio \times \text{average wages}
• Rate of return
Pay 30% of wages
Receive 60% of wages

Rate of return: 60/30-1=100%

• What if the number of the retired increases to 100?
Pay 60%\times Wx(100/100)=60% of wages
Receive 60% of wages

Rate of return: 60/60-1=0%

• Hence, the rate of return depends on an aging factor. A caveat is that productivity growth mitigates this demographic downward pressure on the rate of return.

Rate of return of the Defined-Benefit PAYG pension:

\[ \text{B} = \text{Benefits per receiver} = a \times w \]
\[ a: \text{replacement ration;} \ w: \text{wages of working people} \]

\[ \text{C} = \text{Contribution paid by a worker} = a \times w(-1) \times N(-1)/ N W(-1); \text{wages of beneficiaries when they are young} \]
\[ N(-1): \text{the number of beneficiaries} \]
\[ N: \text{the number of current workers (young people)} \]

\[ \text{Rate of return} = \frac{\text{B}}{\text{C}}-1=\left(1+g\right)(1+n)-1 \]
\[ g: \text{the rate of increase of wages} \]
\[ n: \text{the rate of population growth} \]
Why does PAYG financing attract policy makers?

• When the people demand better social security benefits and there are many young people, PAYG financing enables to offer the benefits with “small” contributions.

• But the rate of return deteriorates as the rates of increase of wage and population decline.

• And the day of reckoning will soon come to the current developing countries.

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Case of Japanese Employees’ Pension

Table 5: The Effective Degree of Maturity of the EPF (percent)

<table>
<thead>
<tr>
<th>Year</th>
<th>The 1992 estimate</th>
<th>The EEFS estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Degree of mortality</td>
<td>Effective degree of mortality</td>
</tr>
<tr>
<td>1995</td>
<td>20.67</td>
<td>26.68</td>
</tr>
<tr>
<td>2000</td>
<td>24.55</td>
<td>34.02</td>
</tr>
<tr>
<td>2001</td>
<td>33.00</td>
<td>51.02</td>
</tr>
<tr>
<td>2020</td>
<td>42.00</td>
<td>65.79</td>
</tr>
<tr>
<td>2030</td>
<td>48.81</td>
<td>70.60</td>
</tr>
<tr>
<td>2040</td>
<td>58.06</td>
<td>84.26</td>
</tr>
<tr>
<td>2050</td>
<td>58.19</td>
<td>96.60</td>
</tr>
</tbody>
</table>


Figure 4: Contributions Rate of the EPF

A: 30%
B: 50%
C: 70%

2) Are the overpayments by PAYG the matters only of Japan?
Korea and Taiwan in the very late 1990s were stuck with the same problems. Will they manage better than Japan?

3) Pension issues are both economic and political. Political democratization and demand for improving welfare might occur at the same time.

3. The consequence of Japanese PAYG public pension

• Cutting benefits
  Changes the gross wage-indexing to net wage-indexing and to the price indexing.

• Warnings from the government
  If things go ahead as they are now and not changed, you have to pay higher contribution rate. Would you pay for it? How high are they?
  Wage earners: 13.5% to 25.9%.
  Self-employed: 13,000JPY/month to 29,500JPY
Final solution? 2004-reform
Why not fix the contribution rate to alleviate your and younger-generations’ costs for sustaining our system? But, we have to cut your benefits further.

This time, the benefit-cutting mechanism is called a “macro-economic” slide. Idea is like this:
1) The system is PAYG.
2) The number of younger people paying the contribution declines; and the period of receiving benefits gets longer, because beneficiaries live longer.
3) The rate of contribution will be capped at 18.3%.
4) Therefore, for sustaining the system, benefits have to be cut automatically according to the combined indexes of the rate of decline of contributors and the rate of prolongation of life expectancy of the beneficiaries.
• Benefits are now set as:
  They increase as much as prices increase, but will be slashed by the combined indexes of
  the rate of decline of contributors and
  the rate of prolongation of life expectancy of beneficiaries.

<table>
<thead>
<tr>
<th>Year of Birth</th>
<th>Married couples</th>
<th>Singles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimate: Ministry of Welfare and Labor</td>
<td>B/C: Premium totally paid by the insured</td>
</tr>
<tr>
<td>1935</td>
<td>4.7 1.7 1.4</td>
<td></td>
</tr>
<tr>
<td>1945</td>
<td>2.6 0.9 0.8</td>
<td></td>
</tr>
<tr>
<td>1955</td>
<td>2.0 0.7 0.6</td>
<td></td>
</tr>
<tr>
<td>1965</td>
<td>1.9 0.7 0.6</td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td>1.7 0.6 0.5</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>1.6 0.6 0.5</td>
<td></td>
</tr>
<tr>
<td>1995</td>
<td>1.6 0.6 0.5</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>1.6 0.6 0.5</td>
<td></td>
</tr>
</tbody>
</table>
4. Important elements for designing social security policy

- **Sustainability of public pension**
  
  PAYG-financing public pension may not be a sustainable one when the rates of growth of productivity and population decline, and when beneficiaries tend to live much longer. That is, the costs for paying benefits cannot be shifted to the current young people forever.

- **Pension as an insurance for longer life**
  
  As the “risk” of living longer is getting higher and the family care of the old is getting more difficult, the importance of pension increases.

- **Separation of insurance and redistribution aspects of public pension**
  
  A sustainable pension will set a separate account for redistribution, and other resources than pension contribution should manage the redistribution account.
Always be conscious about the unfunded liability

The excess of the present expected value of benefits over contribution payments is the unfunded liability of pension, and this must someday be financed by less benefits, more contribution and more taxes.

PAYG is only one of the methods of financing the unfunded liabilities

Note also that PAYG may not always make explicit the amount of the unfunded liabilities.

Collection of premium

Assessing the income of the self-employed is difficult. This makes the collection from them difficult, too. A simple way of collection like charging a lump-sum (fixed) amount instead of income-proportional premium is more practical.
A note on privatizing public pension financed by PAYG to a Funded system

What are the unfunded liabilities of a PAYG pension system?
The excess of the present expected value of benefits over contribution payments.

What is privatizing the pension?
Making the unfunded pension liabilities funded.

How can privatization be done?
Changing payroll financing to other ways of financing like increasing the consumption taxes and other taxes.

What changes will happen by privatizing pensions?
Making the burden of future generations smaller than at the time of PAYG financing.

Your problems

• What are the problems of the social security system of your country?

• Where do they come from?

• How would you propose to reform them?