Workshop for the International Collaboration Project: 
Studies on Employment Situation of Young People through the Micro-Simulations

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Projections of living arrangements and poverty rates for the elderly in Japan—Effect of changes in nuptiality behavior after the 1980s on the poverty rate

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Outline

1. **Introduction**
   - Public pension scheme in Japan
   - Women’s pension benefits by marital status

2. **Outline of a dynamic microsimulation model for Japan**

3. **Simulation results under baseline scenario**
   - Number of demographic events
   - Marital status of the elderly
   - Living arrangements of the elderly
   - Household income distribution
   - Poverty rates by age group and sex

4. **Effect of changes in nuptiality behavior after the 1980s on poverty rate**

5. **Conclusion**
Public pension scheme in Japan

Basic Pension (Flat-rate benefit)
792,100 JPY ($8,883 and €6,657)

Category 1
Self-employed
Non-regular employees
Unemployed

Category 2
Regular employees

Category 3
Dependent spouses of category 2

Survivors’ Pension
$\frac{3}{4}$ of old-age pension

Basic Pension = $792,100 \times \frac{[\text{premium paid period}]+[\text{exempted period}]}{480 \text{ months}} \times 0.5
Pension premium for Basic Pension

- **Category 1**
  - A flat rate of 15,100 JPY ($169 and €127) per month
  - Low-income earners are exempt from paying premium, but their old-age pension will be reduced according to the exempt periods and non-payment periods.
  - A considerable number of people do not pay their premiums.

- **Category 2 and 3**
  - The premium is included in the insured person’s premium to Employees’ Pension Insurance (16.058% of pension remuneration)
  - Problems such as non-payment of premium do not arise.
 Benefit adjustment systems

- Benefit adjustment in accordance with macroeconomic indicators
  - The amount of newly awarded pension is adjusted by the take-home wage increase rate
  - The amount of pensioner’s benefit is adjusted by the CPI increase rate
- “Macroeconomic slide system” introduced in the 2004 amendment
  - The amount of pension is reduced in response to changes in the number of insured persons and increase in the average life expectancy.
  - The reduction is expected to start at year 2012 and end at year 2038.
Premises of pension scheme

- The scheme supposes a post-war lifestyle in Japan
  - Most men and women get married.
  - Husbands work as regular employees (Category 2) and wives are dependent homemakers (Category 3).
  - They seldom get divorced.

- Index of adequacy
  - Replacement ratio for a specific couple is still used as a “model.”
  - The husband is covered by the Employees’ Pension Insurance.
  - The wife is dependent on him for 40 years.

- However
  - Marriage rate has decreased significantly after the 1980s.
  - Divorce rate has increased significantly after the 1980s.
  - Many regular employees have been replaced by non-regular employees after the 1990s.
Women’s pension benefits

- **Married (dependent spouse)**
  - Full basic pension (+ Husband’s pension)
  - If the husband was a regular employee, his pension is generally high.

- **Widow**
  - Full basic pension + Survivors’ pension
  - Survivors’ pension is $\frac{3}{4}$th of the husband’s earning related pension.

- **Never married, Divorced**
  - Basic pension + Earnings-related pension (if any)
  - If she has non-payment periods, her basic pension is reduced.
  - Earnings-related pension for women is generally lower than that for men because there still exists wage inequality between men and women.
Microsimulation model: INAHSIM

New Year

Demography
- Marriage
- Birth
- Death
- Divorce
- International migration

Change in need for long-term care

Change in employment status

Estimating earnings

Determining pensions / adjustment of pension benefit

Young people leaving home

Living with elderly parents

Entering an institution

Social security premium / tax

Micro-level simulation of Japanese society
Numbers of demographic events
## Marital status for the elderly

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never married</td>
<td>Married</td>
<td>Widower</td>
<td>Divorced</td>
<td>Never married</td>
<td>Married</td>
<td>Widow</td>
<td>Divorced</td>
</tr>
<tr>
<td>1970</td>
<td>0.9%</td>
<td>76.0%</td>
<td>21.8%</td>
<td>1.3%</td>
<td>1.2%</td>
<td>31.4%</td>
<td>65.7%</td>
<td>1.8%</td>
</tr>
<tr>
<td>1990</td>
<td>1.1%</td>
<td>83.6%</td>
<td>13.8%</td>
<td>1.5%</td>
<td>2.3%</td>
<td>40.5%</td>
<td>54.2%</td>
<td>3.0%</td>
</tr>
<tr>
<td>2010</td>
<td>3.7%</td>
<td>81.8%</td>
<td>10.8%</td>
<td>3.7%</td>
<td>4.0%</td>
<td>49.6%</td>
<td>41.7%</td>
<td>4.7%</td>
</tr>
<tr>
<td>2030</td>
<td>13.4%</td>
<td>68.0%</td>
<td>11.8%</td>
<td>6.8%</td>
<td>6.6%</td>
<td>44.7%</td>
<td>39.3%</td>
<td>9.3%</td>
</tr>
<tr>
<td>2050</td>
<td>23.7%</td>
<td>59.0%</td>
<td>9.7%</td>
<td>7.6%</td>
<td>15.4%</td>
<td>40.3%</td>
<td>32.4%</td>
<td>11.9%</td>
</tr>
<tr>
<td>2100</td>
<td>26.4%</td>
<td>56.6%</td>
<td>8.8%</td>
<td>8.2%</td>
<td>17.6%</td>
<td>37.3%</td>
<td>32.4%</td>
<td>12.7%</td>
</tr>
</tbody>
</table>
Household income distribution

![Graph showing household income distribution over different years. The graph plots the percentage of households against household income (in JPY 10,000). Different years are indicated by different line styles: 2100 (dotted), 2030 (dashed), 2009 (solid), and 1994 (dashed-dotted). The graph shows a clear trend of income inequality, with a concentration of households in the lower income brackets and a gradual decrease as income increases.]

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## Definition of poverty

<table>
<thead>
<tr>
<th>Type of household</th>
<th>Household members</th>
<th>Livelihood assistance per month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear family</td>
<td>33-year-old husband 29-year-old wife 4-year-old child</td>
<td>145,770 JPY ($1,635 and €1,225)</td>
</tr>
<tr>
<td>Single-person household</td>
<td>68 years old</td>
<td>72,370 JPY ($812 and €608)</td>
</tr>
<tr>
<td>Couple-only household</td>
<td>68-year-old husband 65-year-old wife</td>
<td>109,440 JPY ($1,227 and €920)</td>
</tr>
<tr>
<td>Single-mother household</td>
<td>30-year-old mother 4-year-old child 2-year-old child</td>
<td>128,420 JPY (see note) ($1,440 and €1,079)</td>
</tr>
</tbody>
</table>

Note: Additional benefit for a single-mother household is excluded because INAHSIM does not include social security benefits for that household.
Poverty rates by sex and age group

The last year of “macroeconomic slide”
Changes in nuptiality behavior

If the nuptiality behavior goes back to the traditional one, ........
Conclusion

- Poverty rate in Japan
  - The poverty rate in Japan will increase in the future.
  - That is will mainly impact the elderly, especially on women, for two reasons:
    - Reduction of pension benefits due to the “macroeconomic slide system”
    - Increase in the percentage of never-married or divorced elderly women

- Problems with the current public pension scheme
  - It still assumes a post-war family in Japan. However, this premise is no longer valid.
  - As long as the social insurance system is applied to the basic pension, increase in poverty rate is inevitable.
  - It seems difficult to effectively reform the current public pension scheme.
Conclusion (Cont.)

- **Policy implications**
  - Improvement of the employment environment and resolution of the wage inequality between men and women are very important.
  - However, resolution of these problems does not have an immediate effect on the elderly’s lives.
    - Low amount of pension benefits is promised to today’s low-income earners.
    - Nuptiality behavior will not likely go back to the traditional one.
  - We should recognize that the current public pension scheme does not protect all the people from poverty risks in their old age.

- **Proposal**
  - A national minimum benefit plan should be introduced for the elderly (or for the late elderly).
  - At the same time, a review of the generous benefits for dependent wives and widows is also necessary to generate financial resources for the national minimum benefit.
Thank you