The Value of Collective Pension Contracts

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Reinventing pensions

- Discussion on reforming pension funds
  - Population ageing
  - Economic crisis
- Is privatization of pensions the solution?
- Differences between private and collective pension schemes
  - Risk sharing with future generations
  - Risk sharing between workers and retirees
  - Life cycle investment policies
Features of our analysis

- We construct a number of pension contracts
  - individual
  - first-best
  - real-world contracts (4 of them)

- We adopt numerical simulation in order to compare the different contracts
Motivation of our analysis

- Transition period
- Distinction between different generations, including yet unborn ones
- Welfare analysis
  - level of consumption
  - stability of consumption
- Absence of private capital markets
General assumptions

- Isoelastic preferences
- Investment alternatives: risky equity and risk-free bonds
- Welfare measure for generation $i$
- Measure of aggregate welfare
Real-world contract

- Contribution rule
  - link between contribution rate and funding ratio ($\lambda_{pp}$)

- Pension rule (indexation rule)
  - link between rate of indexation and funding ratio ($\lambda_{\pi}$)

- Investment rule
  - link between equity investments and financial wealth (age-independent)
### Real-world contract

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<tr>
<th></th>
<th>BM</th>
<th>Alt. 1</th>
<th>Alt. 2</th>
<th>Alt. 3</th>
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<tbody>
<tr>
<td>$\lambda_{TT}$</td>
<td>0.1</td>
<td>0.1</td>
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<td>0.01</td>
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<tr>
<td>$\lambda_{pp}$</td>
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<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
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<tr>
<td>AEV (% of wealth)</td>
<td>-11</td>
<td>-9</td>
<td>-8</td>
<td>1</td>
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<tr>
<td>- imperfect smoothing</td>
<td>-11</td>
<td>-10</td>
<td>-18</td>
<td>-60</td>
</tr>
<tr>
<td>- IRS</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>61</td>
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Caveats

- Distortive effects of collective pension schemes upon labor markets
- Private capital markets
- What is the appropriate utility function?
  - Degree of risk aversion
  - Habit formation
  - Prospect theory
- Not only equity is risky (bonds, human capital)
Conclusions

- The gains from risk sharing with future generations are modest
- The losses due to imperfect consumption smoothing are big

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<thead>
<tr>
<th></th>
<th>Collective scheme</th>
<th>Individual scheme</th>
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<tbody>
<tr>
<td>IRS</td>
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<td>Investment and contribution policies</td>
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