Automatic Adjustment Mechanisms in Pensions: Rationality vs. Populism

Axel Börsch-Supan

Munich Center for the Economics of Aging (MEA) at the Max Planck Institute for Social Law and Social Policy, Technical University of Munich (TUM), and NBER

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Contradiction 1

Pension systems need to adapt to an often hostile environment

Demography: population aging and migration
Macroeconomy: productivity growth, inflation

vs.

Pensioners and workers demand stability and dependability

Same replacement rate as their parents
No changes in retirement age
System stability requires long-term rules
Wage indexation
Price indexation
Retirement age indexation to life expectancy

vs.

Attracting voters requires actionism
Minimum pension
Inflation bonus
Retirement age reduction

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1. Prevent poverty
   Means-tested base pension

2. Automatic adjustments
   Pay-as-you-go pillar
   Retirement age
   Life expectancy
   System dependency

3. Fully-funded pillars
   Mandatory (occupational, state)
   Voluntary (individual)

   „Nudging“
1. **Prevent poverty**
   *Means-tested base pension*

2. **Automatic adjustments**
   *Pay-as-you-go pillar*
   - Retirement age
   - Life expectancy

3. **Fully-funded pillars**
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1. Or latest year available.

Mechanics:

Credits:
All contributions are credited on a life-time basis to an individual account on a currency basis. Accounting rules are equivalent to financial accounts.

Rate of return (the crucial [N]DC parameter!):
Balance accumulates with a notional rate of interest: pay-as-you-go fundamentals (internal ror=n+g, productivity & demography)

Benefits:
Conversion at retirement into an annuity, allows flexibility in choice of retirement age. Stock-flow conversion according to actuarial rules, i.e. function of SS wealth, internal ror and longevity.

Advantages:
• Actuarial fairness/exposes redistribution:
• Automatic response to macro environment:

Disadvantages:
• Not automatically balancing (short-run stability)
• Not automatically sustainable (long-run stability)
• No substitute for pre-funding
1. **Prevent poverty**

   *Means-tested base pension*

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   **“Nudging”**

**Divide longevity gains between work and retirement**

- Need about **2 years work** to finance **1 year retirement** since $\approx 40$ years life time work and $\approx 20$ years retirement

- **Hence: 2 to 1 rule**
  - e.g.: 3 added life years
    - = 2 added work years
    - + 1 added year of retirement

- **Examples**: Netherlands, Denmark, Norway, France (private sector)
**1. Prevent poverty**

*Means-tested base pension*

**2. Automatic adjustments**

*Pay-as-you-go pillar*

- Retirement age
- Life expectancy

*Replacement rate*

*System dependency*

**3. Fully-funded pillars**

- Mandatory (occupational, state)
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*Nudging*

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**Budget constraint of a pay-as-you-go pension system:**

\[
\text{Revenues} = c \times w \times NW \\
\text{Expenditures} = r \times w \times NP
\]

\[c = \text{contribution rate}, \quad w = \text{wage}, \quad NW = \text{workers}\]

\[r = \text{replacement rate}, \quad w = \text{wage}, \quad NP = \text{pensioners}\]

Hence \[c/r = NP/NW\]

NP/NW = dependency rate

**Population aging** \[\Rightarrow NP/NW \uparrow\]

**Policy 1:** keep replacement rate constant \[\Rightarrow \text{need to increase the contribution rate}\]

(DB principle) \[\Rightarrow \text{all burden on the younger generation}\]

**Policy 2:** keep contribution rate constant \[\Rightarrow \text{need to decrease the replacement rate}\]

(DC principle) \[\Rightarrow \text{all burden on the older generation}\]

**Policy 3:** compromise between DB and DC

\[\Delta \text{benefit} = \alpha \times \Delta \text{wages} + (1 - \alpha) \times \Delta NW/NP\]

"sustainability factor"
1. Prevent poverty
   *Means-tested base pension*

2. Automatic adjustments
   *Pay-as-you-go pillar*

<table>
<thead>
<tr>
<th>Retirement age</th>
<th>Replacement rate</th>
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<tr>
<th>Mandatory (occupational, state)</th>
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<td>NDC</td>
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3. Fully-funded pillars

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**Funded pillars**

*Assets in pension funds, 2014*

Source: OECD
But still serious problems
- Cannot address the poor
- Markets failed to weed out costly pension plans
- Bad asset allocation (government bonds, home bias)
- Wide-spread lack of information: employees and employers

Need adaptable PAYG system for the less affluent

How to design adaptable pension systems?
- Sustainability vs. adequacy challenges
- Guiding principles: 1. Separate issues, 2. Create automatic stabilizers

Zero pillar reforms: means-tested base pension avoids old-age poverty

First pillar reforms:
- Automatic adjustment of retirement age to life expectancy
- Sustainability factor: Index benefits to dependency ratio
- Has been very successful as compromise between adequacy and sustainability
- Even better: Notional defined contribution (NDC) systems which adapt to population aging and create a sense of actuarial fairness
- Political reality? Populist temptations!
- Our task: Invent compromises such as “sustainability factor” and the “2:1 rule for retirement age” which are key to compromises