NDC
A Universal Non-financial Defined Contribution Public Pension Scheme
- Framework and Implementation

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Principles of a (Good) **Mandatory Public Pension System**

1) Universal – the same rules apply to all.

2) Affordable, financially stable and sustainable across generations.

3) Adequate income in retirement.

4) Economically efficient.

5) Intra- and inter-generationally fairness.

6) Benefits are provided at minimum costs.

7) For financial pension saving schemes:
   - Prudent risk-based approach with good yields.
   - Adequate supervision.
NDC

Financial Sustainability, Efficiency and Fairness
- System Design with NDC
The Design and Mechanics of NDC

- Contributions are paid to individual accounts. (The contribution rate is set so as to achieve the desired replacement rate for the average full career worker. Accounts give transparency and provide the basis for micro-economic efficiency)

- The pension benefit is based on the individual’s account value at retirement and life expectancy:

  \[ \text{Yearly Pension} = \frac{\text{Account Balance at Retirement}}{\text{Life Expectancy}} \]

  (The annuity construction creates financial sustainability and creates time consistency with life expectancy.)

- Accounts and benefits are indexed: (Rate of growth of per capita real wage) x (rate of growth of contributors) x (rate of inflation). \( \rightarrow \) Financial sustainability

- Minimum but no “the” pension age – can easily combine full/part-time work. Indexation of the pension age to life expectancy.

- Fixed contribution rate on income – intra- and intergenerational fairness.
 Latvia: Components of the NDC Index for Valorisation of Accounts and Benefits

- Real per capita wage growth
- Growth of contributors
- Rate of inflation


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<thead>
<tr>
<th></th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
<th>2050</th>
<th>2060</th>
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<tbody>
<tr>
<td>Average real wage growth of contributors</td>
<td>4.0</td>
<td>2.4</td>
<td>2.0</td>
<td>1.8</td>
<td>1.5</td>
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<tr>
<td>Labor force growth</td>
<td>-1.6</td>
<td>-1.5</td>
<td>-0.5</td>
<td>-0.9</td>
<td>0.1</td>
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<tr>
<td>Price growth (CPI)</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
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<tr>
<td>Total nominal index</td>
<td>4.4</td>
<td>2.9</td>
<td>3.5</td>
<td>2.9</td>
<td>3.6</td>
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<td>2.4</td>
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<td>1.6</td>
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The Swedish Balancing Mechanism
NDC - The Internal Rate of Return and Balancing - Slide 1

• Three methods employed to date:

• Index with $g, \lambda & p$ (Latvia, Poland)
• Index with only $g & p$ (Sweden, Norway*)
• Index with nominal GDP growth (Italy)

• A third alternative is to index with either $g, \lambda & p$ or with only $g & p$, and also employ balancing of liabilities if the solvency ratio $B = \frac{A}{L}$ falls below unity.

Where $A$ and $L$ are the present value of assets and liabilities.

*Norway balances through the government budget, backed by the Norwegian Oil Fund.
The Swedish Balancing Mechanism - Slide 2
Definitions of Liabilities and Assets

• Liabilities are the accounts of all workers and pensioners – known by definition
• Assets are unknown and must be estimated. The Swedish model is:

\[ A_t = TD_t \times \text{Contributions}_t + \text{Fund}_t \]

TD\(_t\), is the is money-weighted average time a unit of money is in accounts I.e., the the money-weighted average number of years a worker is in the labor force and in retirement of a pensioner.

The Minimum Pension
Using Accounts for “Add-on” Social Policy
and Partners’ Sharing Accounts
Redistribution is “Added-in” for Purposes of Social Policy – tax-financed through the state budget

• A universal minimum income guarantee is required.
• Disability insurance → separate insurance. E.g. based *imputed* income with contributions from the insurance budget to the NDC accounts.
• Child-care rights + at home care for a sick child.

Other examples:
• Care rights in conjunction with functionally impaired minor.
• Contributions paid by the insurance provider (government in Sweden) in conjunction with periods of absence from paid work, covered by sickness or unemployment insurance.
The Gender Gap
A Structural Problem That’s Here to Stay in the Foreseeable Future

• The Two Main Determinants:
  - Part-time formal work of women in conjunction with the birth of children and care of relatives.
  - Formal jobs dominated by females (care, education, etc.) are paid considerably less for hour than those dominated by men.

• What can/should we do through the design of the country’s universal pension commitment?

• Design childcare rights to reflect reality

• Introduce sharing of pension rights with sharing as the default:
  - Sharing during during working years / joint annuities at retirement
What Is Adequacy?

... what is the percentage of lifetime income “we” are willing to transfer from consumption today – in working life – to a stream of consumption throughout old age?
Determination of the Equilibrium NDC Contribution Rate

• The General Equation:* 

\[
\text{Contribution rate} = \frac{\text{Ave. Pension}}{\text{Ave. Wage}} \times \frac{\text{LE as a Pensioner}}{\text{Ave. No. of Years of Work}}
\]

Example: \[22.5 = 0.5 \times \frac{18}{40}\]

Note. This can be shown* to be equivalent in equilibrium to the macro equation where the ratio on the right-hand side is the economic dependency ratio (number of pensioners/number of contributors).

Micro scale - Contribution Rate needed to finance benefits that on average are 50% of an average wage.
Period of retirement of 17, 19, 21, 25 years
A Reminder

Pensions are a *reflection* of the labor market together with our own individual decisions, in our choices prior to and during our working life.

... The goal is, to design a just pension system in terms of the criteria we started with – which I believe most would accept. NDC is an answer to how these criteria can be fulfilled.
Issues in Conversion
- from Defined Benefit PAYGO to NDC

• Conversion of acquired rights

• Legacy Costs: What are the total liabilities of existing commitments going forward?

• In sum: NDC has the advantage that acquired (“old” scheme) rights are quantified in terms of liabilities and become an NDC commitment.
Thank You!