Dutch pension reforms

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Main elements Dutch pension arrangements
Dutch pension arrangements

- Dutch pension arrangements:
  1. **PAYG pillar** (everybody eligible)
  2. **Funded pillar** (mandatory for most employees)
  3. **Funded pillar** (voluntary)

- Peculiarity of the second pillar:
  - DB-like with intergenerational risk sharing
  - relatively large
PAYG pillar (AOW)

- About half of aggregate retirement income
- Fully flat (couple gets 2 times 70% of the benefit)
- Every resident eligible (build up at 2 percentage points a year)
- Retirement age was originally 65 years old
- Revised in 2012 – retirement age has been going up and will go up further in steps:
  - It is 66 now and will be 67 in 2021
  - Further rises are based on development of life expectancy and be established 5 years ahead of increase
Funded pillar (DB in “legal” sense)

- Sectoral, company or professional funds
- Mandatory participation by both employees and employers
- Self-employed are (largely) outside the system, and need to provide for their own supplementary pension via third pillar
- Average-wage based system, for example
  - Wage 100 k and 2% accrual rate implies an extra 2 k of annual retirement income
- Uniform contribution and accrual rate
- Accumulated savings are pooled
Funded pillar

- Financial health of pension fund is measured by funding ratio (FR) = market value of assets divided by liabilities

- Liabilities are calculated using swap curve (risk-free rate)

- Differences assets and liabilities is buffer

- Buffer falls if swap curve shifts down or life expectancy increases

- FR = 100% : nominal claims can be covered

- FR around 130% : purchasing power of claims can be maintained

- Supervision is nominal and based on FR
Fund pillar

- Restoration plan
  - Shortage of reserves, restoration plan needed to eliminate shortage in 10 year
    (fund dependent; FR between 120 and 125%)
  - If insufficient, accrued entitlements will be marked down
  - When “policy FR” below 105% for 5 years, entitlements will be marked down

- Intergenerational risk sharing – how?
  - Shocks are transmitted through buffer
  - If buffer low, there is no indexation, hence all retired and working participants share
    in the fund’s fortunes; similar in case of mark down
  - Increase in contribution rate makes all workers share shocks
Funded pillar

- All conceivable shocks can be shared through the buffer
- Buffer makes markets more complete
  - Productivity shocks are shared with retired to the extent that indexation linked to nominal wage growth
  - Shocks are transmitted to future entrants through buffer
- Annual indexation
  - If FR below 110% zero indexation
  - If 110% < FR < 125% partial indexation
  - If FR >125% full indexation
Threats to Dutch secondary pillar
Threats to Dutch secondary pillar

- Major shocks, strong fluctuations in investment returns, falling funding ratio
- Low interest rates
- Rising life expectancy
- Reduced risk absorption capacity, contribution rate becomes less effective as an instrument
- Rising contribution rates
Reform options
Fundamental trade-off pension ambition and certainty at given contribution level

- High ambition, low certainty
- Low ambition, high certainty

Current system

Perception of participants

Less ambition

Less certainty
Reform options that have been discussed

- Lower ambition
  - Slower accrual
  - Maximum pension salary
  - Indexation to price instead of nominal wage inflation

- Higher contributions

- Increase in retirement age

- Soft ("buffer") versus hard entitlements:
  - young participants have more soft entitlements
  - Soft entitlements need to benefit more from increasing funding ratio
  - Transformation of soft into hard entitlements as one becomes older
Directions of development

- Abolish uniform contribution and accrual rate
  - Young pay for old, because contribution can earn return for longer
  - Apart from a small PAYG element, i.e. first retirees “not having paid enough” when young, this is fine as long as one spends entire career at same fund
  - However, labour market is becoming more dynamic and more people become self-employed mid-career

- Abolishment is foreseen
  - One option is to keep uniform contribution rate and actuarially fair accrual rate
  - Or actuarially fair contribution rate and constant accrual rate
  - Incentive effect versus labour cost elderly
  - Transition payment budgeted by government
Directions of development

- To make system (politically) sustainable, individual accounts with collective risk sharing; retirement phase probably collective

- Several variants
  - Implicit buffer + assigned uniform return based on long-run average
  - Analogous, but assigned return based on performance age-based portfolio
  - Explicit buffer financed out of contributions
  - Explicit buffer financed out of portfolio returns, to stabilize investment return on account
  - Sharing longevity risk
  - Sharing inflation risk
Directions of development

- Individual accounts with collective risk sharing – obstacles:
  - How to split up existing buffers – choice of discount curve?
  - Scope for risk sharing likely reduced, because buffer cannot become negative
  - Supervision needs to be adjusted (less relevance funding ratio and discount curve)
  - System does not seem simpler than current one

- Reform progress is extremely slow – what determines their timing?
Timing of pension reform measures
– international comparison
Data

- 23 OECD countries
  - Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States

- 1970 – 2013, yearly
  - Includes baby bust, longevity shocks, 70’s oil crisis, early 80’s recession, great moderation, EMU, dot-com crisis, great recession, sovereign debt crisis and retirement of baby boom
Pension reform measures

- In each year, and for each country we count and classify pension reform measures based on a careful reading of documents from the International Social Security Association, the OECD and the International Labor Organization
  - If additional information was needed, we consulted other, mostly national sources.
  - We date reform measures according to the year in which they are legislated

- Total of 938 reform measures, 604 classify as “expanding” or “contracting” which are used in our analysis
Pension reform measures: classification

Expanding reform measures

Coverage
Reform measures that *expand* the coverage, for example by weakening the eligibility criteria

Generosity & adequacy
Reform measures that *expand* the generosity of the pension system, for example by raising the benefit level

Contracting reform measures

Fiscal sustainability
Reform measures that *enhance* the fiscal sustainability of the pension arrangement

Work incentives
Reform measures that *enhance* work incentives

Database also contains subcategories and other categories such as “administrative efficiency”, etc.
## Example: The Netherlands

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>Link social security to minimum wage</td>
<td>Generosity &amp; adequacy</td>
</tr>
<tr>
<td>1976</td>
<td>Early retirement made possible in education. later also construction.</td>
<td>Generosity &amp; adequacy</td>
</tr>
<tr>
<td>1984</td>
<td>Cut social security together with social minimum</td>
<td>Fiscal sustainability</td>
</tr>
<tr>
<td>1985</td>
<td>Women gain equal entitlement to General Old Age Benefit Act.</td>
<td>Coverage</td>
</tr>
<tr>
<td>1988</td>
<td>Voluntary early retirement age is lowered to 60. Police officers aged 57 years or older on 1 July 1988 will be entitled to a retirement benefit.</td>
<td>Generosity &amp; adequacy</td>
</tr>
<tr>
<td>1990</td>
<td>Voluntary early retirement age is lowered to 60.</td>
<td>Generosity &amp; adequacy</td>
</tr>
<tr>
<td>1992</td>
<td>Conditional Indexing Adjustment Act (WKA. 1992) allows indexation to be suspended under conditions of a rapid deterioration of the dependency rate</td>
<td>Fiscal sustainability</td>
</tr>
<tr>
<td>1993</td>
<td>Suspension of pension benefit indexation for three consecutive years</td>
<td>Fiscal sustainability</td>
</tr>
<tr>
<td>1994</td>
<td>Civil servants may obtain a reduction of their hours of work when they reach the age of 59 and consequently may receive an allowance for loss of wage.</td>
<td>Generosity and Adequacy</td>
</tr>
<tr>
<td>1996</td>
<td>Reductions in survivors' pensions</td>
<td>Fiscal sustainability</td>
</tr>
<tr>
<td>2004</td>
<td>Life-course plans enable workers to apply for tax-cuts to save for unpaid leave</td>
<td>Expanding</td>
</tr>
<tr>
<td></td>
<td>Tax advantages for early retirement and pre-pension arrangements abolished</td>
<td>Fiscal sustainability</td>
</tr>
<tr>
<td>2012</td>
<td>Pension age increased from 65 to 66 in 2020 and 67 from 2025</td>
<td>Fiscal sustainability</td>
</tr>
</tbody>
</table>
Pension reform measures
By country and type

Pension reform measures
By year and type, main

1. Coverage
2. Generosity & adequacy
3. Financial & fiscal sustainability
4. Work incentives

Old-age dependency ratio

- Old-age dependency ratio
  - Number of people of 65 and older divided by the number of people in the age category 15-64 (times 100)

- Realisations and forecasts taken from UN World Population Prospects (UN-WPP)
  - Projections are only made for specific years ahead at 5-, 10-, 15-year etc. intervals.
Other variables

- Economic variables
  - Real GDP growth, unemployment rate, openness of trade, inflation, short term interest rate, long term interest rate

- Public finance (% of GDP)
  - Debt, deficit, revenues, disbursements

- Political variables
  - Cabinet orientation, new government, type, election year, …

- Crisis variables (dummies)
  - Bank crisis, currency crisis, sovereign debt crisis (including restructuring)
Pension reform regimes: dummies

- Expanding only
  - 1 if (# Expanding reform measures > 0 and # Contracting reform measures = 0), 0 otherwise

- Contracting only
  - 1 if (# Expanding reform measures = 0 and # Contracting reform measures > 0), 0 otherwise

- Contracting and expanding
  - 1 if (# Expanding reform measures > 0 and # Contracting reform measures > 0), 0 otherwise
Empirical analysis

- We only observe type and number of reform measures. We do not know quantitative effect of any reform measures
- Panel logit regression with country-fixed effects
  - Relationship between probability of a certain type of reform measure and macroeconomic and demographic conditions
Frequencies of the different policy regimes in each sample year

- Expanding only
- Contracting only
- Expanding & contracting
## Pension reform regimes: numbers

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Expanding</td>
<td>244</td>
<td>115</td>
<td>129</td>
</tr>
<tr>
<td>Expanding only</td>
<td>184</td>
<td>101</td>
<td>83</td>
</tr>
<tr>
<td>Contracting</td>
<td>159</td>
<td>36</td>
<td>123</td>
</tr>
<tr>
<td>Contracting only</td>
<td>99</td>
<td>22</td>
<td>77</td>
</tr>
<tr>
<td>Contracting &amp; expanding</td>
<td>60</td>
<td>14</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>343</td>
<td>137</td>
<td>206</td>
</tr>
</tbody>
</table>
Regression framework

- Estimate logit regressions for each type of reform regime
  (Expanding only, Contracting only and Contracting & expanding)

\[
p_{it,r} = \frac{\exp(z_{it,r})}{1 + \exp(z_{it,r})}
\]

with

\[
z_{it,r} = \alpha_{0i,r} + \alpha_r' BASEVAR_{it} + \delta_r' ADD_{it}
\]

where

\[
BASEVAR_{it} = (OAD25_t, DOAD25_{it}, \Delta OAD25_{it}, GROWTH_{it}, DEF_{it}, UNEMPL_{it})'
\]
## Logit estimations for the baseline regressions

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variables</strong></td>
<td>Expanding</td>
<td>Contracting</td>
<td>Contracting and Expanding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$OAD25_t$</td>
<td>-3.39**</td>
<td>-0.49**</td>
<td>5.70***</td>
<td>0.36***</td>
<td>9.55***</td>
<td>0.44***</td>
</tr>
<tr>
<td></td>
<td>(1.54)</td>
<td>(0.22)</td>
<td>(1.63)</td>
<td>(0.10)</td>
<td>(2.18)</td>
<td>(0.096)</td>
</tr>
<tr>
<td>$DOAD25_{it}$</td>
<td>1.22</td>
<td>0.17</td>
<td>-0.32</td>
<td>-0.020</td>
<td>-1.86</td>
<td>-0.085</td>
</tr>
<tr>
<td></td>
<td>(3.40)</td>
<td>(0.49)</td>
<td>(4.29)</td>
<td>(0.27)</td>
<td>(4.90)</td>
<td>(0.22)</td>
</tr>
<tr>
<td>$\Delta OAD25_{it}$</td>
<td>-5.77</td>
<td>-0.83</td>
<td>3.58</td>
<td>0.23</td>
<td>10.0</td>
<td>0.46</td>
</tr>
<tr>
<td></td>
<td>(7.63)</td>
<td>(1.10)</td>
<td>(9.35)</td>
<td>(0.60)</td>
<td>(10.7)</td>
<td>(0.49)</td>
</tr>
<tr>
<td>$GROWTH_{it}$</td>
<td>12.1***</td>
<td>1.09*</td>
<td>-13.7***</td>
<td>-0.88***</td>
<td>9.53</td>
<td>0.44</td>
</tr>
<tr>
<td></td>
<td>(4.67)</td>
<td>(0.57)</td>
<td>(4.79)</td>
<td>(0.30)</td>
<td>(6.66)</td>
<td>(0.30)</td>
</tr>
<tr>
<td>$70s \times GROWTH_{it}$</td>
<td>-21.5***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7.68)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$DEF_{it}$</td>
<td>-0.24</td>
<td>-0.034</td>
<td>-2.65</td>
<td>-0.17</td>
<td>11.1**</td>
<td>0.51**</td>
</tr>
<tr>
<td></td>
<td>(3.19)</td>
<td>(0.46)</td>
<td>(3.92)</td>
<td>(0.25)</td>
<td>(4.61)</td>
<td>(0.22)</td>
</tr>
<tr>
<td>$UNEMPL_{it}$</td>
<td>2.22</td>
<td>0.32</td>
<td>14.4***</td>
<td>0.92***</td>
<td>-1.12</td>
<td>-0.051</td>
</tr>
<tr>
<td></td>
<td>(3.82)</td>
<td>(0.55)</td>
<td>(4.88)</td>
<td>(0.30)</td>
<td>(5.65)</td>
<td>(0.26)</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>989</td>
<td>989</td>
<td>989</td>
<td>989</td>
<td>860</td>
<td>860</td>
</tr>
</tbody>
</table>
Empirical analysis: stylised facts

- Reform measures are relatively infrequent in most countries.
- Projection OECD-wide old-age dependency ratio helps to explain regimes: increase reduces “Expanding only”, increases “Contracting only” and “Contracting and expanding”.
- Country deviations and changes in country projections play no role.
- Business cycle swings do coincide with reform measures.
- Hence: demographic forecasts are relevant for the type of reform measures, not their *timing*: business cycle fluctuations create conditions for reform and dominate role of demographic changes.