Population Ageing – A Threat to the Welfare State?

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Eurostat/UNECE Work Session on Demographic Projections,
Rome, 2013-10-29
Global ageing 2000 and 2050: Elderly (65+) in relation to the labour force (20-64)

OECD 2009
1st Population Ageing = Past

• Caused by falling fertility
• Increase in life expectancy slowed down population ageing since more years were gained in ages below 65 years than above
• Increase in old age dependency ratio was fully compensated for by the decline of youth = the total dependency ratio went down
2nd Population Ageing = Present

• Caused by reductions in mortality among the elderly

• Both old age and total dependency ratio will increase, the latter from 70 to 85 until 2050 in Sweden ( ~ 20 % increase)

• What are the consequences? To fully understand, we need to analyse consumption and production for each age group
Production and consumption by age

production

consumption

20 years  65 years  age
Production and consumption by age: Sweden 2003

Forsell et al 2008
Private and public consumption by age: Sweden 2003

Forsell et al 2008
Projected life cycle deficit: Sweden 2007-2050, 2007=100

Assumptions:
- 2050 $e_0$ men 84, women 86
- 2029 TFR 1.83 then stable

Bengtsson & Scott 2010
Increase in life cycle deficit

• Health care costs has been increasing by more than 1 % per year per capita in real value over recent decades

• If it continues, then the life cycle deficit will grow with a factor of at least 400 % instead of 250 % until 2050

• 0.3-0.5 percent annual increase in GDP/capita needed to compensate

• Most of the change takes place within the next 20 years
What can we do about it?

• Higher immigration?
• Higher fertility?
• Productivity increase?
• Increase in working hours?
• Reduced consumption?
What can we do about it?

- Higher immigration? **Too little!**
- Higher fertility?
- Productivity increase?
- Increase in working hours?
- Reduced consumption?
What can we do about it?

- Higher immigration? Too little!
- Higher fertility? Too late!
- Productivity increase?
- Increase in working hours?
- Reduced consumption?
What can we do about it?

• Higher immigration? **Too little!**
• Higher fertility? **Too late!**
• Productivity increase? **Too difficult!**
• Increase in working hours?
• Reduced consumption?
Increase in working hours?

• 65% of those aged 20-64 years work today
• 41 weeks per year in EU, 45 in the US
• Life expectancy at age 65 years is increasing
• Thus there should by possibilities to increase working hours in all ages, which must be matched by an increase in the capital stock

Everything else equal, retirement age in Sweden has to increase by 5.5 years until 2040-50 to keep consumption from falling (~ 1.3 month per years)
Age at retirement and exit from labour force: different OECD countries in 2008

Olsson 2011
Exit age for those working at age 50 years: different OECD countries 1990-2010

- Japan
- Sweden
- USA
- Greece
- Germany
- Italy
- France
- Netherlands

Karlsson & Olsson 2012
Proportion with labour income by age in EU counties 2006/7

Klevmarken 2010
Exit age: Sweden 1970-2010

- Retirement age changed from 67 to 65 years
- Early retirement programs
- New pension system

1963: 68 years
How much has the recent increase in age at exit from the labour force affected income at older ages?
Labour income by age 1985-2003: Sweden
### Age at exit from the labour force of 1939 year’s men by education: Sweden

<table>
<thead>
<tr>
<th>Education</th>
<th>Age at exit</th>
<th>Later exit</th>
<th>Extra years of schooling</th>
</tr>
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<tbody>
<tr>
<td>Primary</td>
<td>61.7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Secondary</td>
<td>62.9</td>
<td>1.2</td>
<td>3</td>
</tr>
<tr>
<td>Tertiary</td>
<td>63.5</td>
<td>1.8</td>
<td>6</td>
</tr>
<tr>
<td>Research (PhD)</td>
<td>65.0</td>
<td>3.3</td>
<td>10</td>
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Will the present increase in age at exit from the labour force solve the funding problem of population ageing?

- Costs for the elderly goes also up
Consumption by age 1985-2003: Sweden

Haodong Qi forthcoming
Will the present increase in age at exit from the labour force solve the funding problem of population ageing?

• Costs for the elderly also goes up
• So does age at entry into labour force
## Average age at leaving education and time to find work: EU countries 2012

<table>
<thead>
<tr>
<th>Education</th>
<th>Age at leaving school, years</th>
<th>Time to find work, months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>low</td>
<td>EU mean</td>
</tr>
<tr>
<td>Primary</td>
<td>14.3</td>
<td>17.3</td>
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<tr>
<td></td>
<td>Bulgaria</td>
<td>Northern Europe</td>
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<tr>
<td>Secondary</td>
<td>19.9</td>
<td>21.3</td>
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<tr>
<td></td>
<td>Germany</td>
<td>UK</td>
</tr>
<tr>
<td>Tertiary</td>
<td>22.0</td>
<td>26.0</td>
</tr>
<tr>
<td></td>
<td>UK</td>
<td>Denmark</td>
</tr>
</tbody>
</table>

Albissini & Cascioli 2012
European challenges, welfare issues

• Pension systems need to be reformed
  – Pay-as-you-go system supplemented by funded systems. Stronger link between contributions and benefits
  – The Swedish system is contribution based with a break at 11% of GDP. Swedish system is stable from an actuarial point of view, but pensions will decline unless retirement age increase

• Social care systems need to be reformed
  – Family versus public? Contribution based as well?

• Health care systems need to be reformed
  – But is it really possible to make similar reforms as in pension systems?
European challenges, labour market issues

• Incentives and opportunities to work at older ages
• Life time learning instead of early retirement programs
• Incentives and opportunities for young and immigrants to get into the labour force faster
• Improvements in educational programs
• Shorten time to finding work by vocational training, internship, etc
• Flexicurity?
• LABOUR DEMAND
Forecasting issues

• How sensitive are our forecasts of life cycles deficits to mortality assumptions?

• How sensitive are they to assumptions on age-specific production and consumption?
Projected life cycle deficit with 2003 net consumption using different mortality forecasts: Sweden 2007-2050

- e₀ in 2050:
  - 2013 men 85 women 87
  - 2007 men 84 women 86

- 320 % increase
- 250 % increase
- 70 % difference
Projected life cycle deficit with latest mortality forecast: different production and consumption patterns, Sweden 2007-2050

- 320% increase
- 80% increase
- 240% difference
Increase in life cycle deficit, revised

• Health care costs has been increasing by more than 1 % per year per capita in real value over recent decades

• Life cycle deficit will grow with a factor of at least 400–500 % instead of 250 % until 2050

• 0.3–0.5 0.4–0.7 percent annual increase in GDP/capita needed to compensate

• Most of the change takes place within the next 20 years
European challenges, forecasting issues

– Mortality decline underestimated in almost all forecasts
– Official forecasts rarely take age-specific consumption and income into account

Political measures taken to account for population ageing are therefore not in par with future problems:

• Pension systems are sometimes able to coop with population ageing regardless of future changes
• Funding of social and health care much more problematic!
European challenges, forecasting issues

– Mortality forecasts are very important!
European challenges, forecasting issues

– Mortality forecasts are very important!

– Even more important is to take age-specific consumption and production into account!