# Assessing the social sustainability of pension reforms in Europe

Dr. Aaron G. Grech

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Supervisors: John Hills, Nicholas Barr

# Research Questions

- **Are the pension reforms enacted in Europe since the 1990s sustainable?**

- *Theoretical questions*
  - How best to capture the achievement of goals and the pressure on constraints of a pension system?
  - Can one develop a concept of sustainability encompassing both system goals and constraints?

- *Empirical questions*
  - What will reforms do to the achievement of goals of, and the constraints faced by, pension systems?
  - Will the reforms prove long-lasting?

# The concept of social sustainability

- Existing literature looks at sustainability, solely in terms of **financial sustainability**.
- Adequacy and sustainability are seen as **conflicting**.
- But an inadequate system creates pressures for improvements (e.g. **UK after the 1980s**), while a costly system creates pressures for cuts in generosity (e.g. **Italy since the 1990s**).
- Assessments of the sustainability of reforms, therefore, need to focus on the effects **on both system aims and constraints**.

# How to measure system aims and constraints?

- State pension systems have two main aims:

  **- poverty alleviation ⇨** enable elderly to have income above poverty threshold;

  - **income replacement ⇨** enable consumption smoothing over the lifecycle.

- State pension systems face two main constraints:

  **- financial sustainability ⇨** ensure future workers not ‘rebel’ over size of future taxes compared to those paid by current workers;

  **- intergenerational balance ⇨** ensure future pensioners not ‘rebel’ over size of pensions compared to those received by previous pensioners.

# How to measure system aims and constraints?

- At present most analysis of the effect of pension reforms focuses on **replacement rates** and **pension spending as % of GDP**.

- Replacement rates compare the pension received **at the point of retirement** to the pre-retirement wage of the individual. These are calculated using hypothetical individuals (usually **full-career full-timers on the average wage**).

- Spending as a % of GDP is calculated using broader models and usually **independently from** the replacement rates for the hypothetical individuals.

# How to measure system aims and constraints?

- **Broad issues**:
  - these indicators do not capture the 2 main aims and the 2 main constraints of pension systems;
  - they do not have benchmarks to assess trends;
  - they are computed separately/not consistent.

- **Specific issues:**
  - replacement rates are point-in-time, fail to account for changes in longevity and impact of uprating;
  - one cannot capture full effects of reform (especially systemic) by looking at just average earner;
  - assuming full-careers can greatly misrepresent current and future outcomes, especially for women;
  - spending as a % of GDP does not capture fully the burden on future taxpayers.

# The social sustainability framework

- Instead of having separate framework to assess aims and constraints, use one base measure – **pension wealth** – to assess everything.

- Pension wealth - the discounted stream of future pension payments – captures effects of changing longevity on total flows and of uprating on relative value of flows after retirement.

- Instead of average full-career case, look at different cases to take into account effects for different income levels and genders, and incomplete careers.

- Determine benchmarks against which to assess changes in the indicators.

# Methodology

- Develop **indicators** capturing the achievement of goals and the constraints faced by pension systems
- Use OECD's **APEX model** to estimate entitlements for hypothetical individuals, pre- and post-reform;
- Model **11 individuals for each gender** (9 full-timers at each wage decile, a part-timer and someone on minimum provision) with career length reflecting actual and projected labour participation;
- Look at **10 different countries** having different system goals and constraints, and having enacted either parametric or systemic reforms.

# The social sustainability indicators

- Assessing the twin aims:

- **Poverty alleviation** – determine what poverty threshold (average annual pension as a percentage of national disposable income) the net pension wealth of the hypothetical individuals would sustain throughout retirement.

- **Consumption smoothing** – determine what replacement rate (average annual pension as percentage of the hypothetical individuals' pre-retirement wage) the net pension wealth of the hypothetical individuals would sustain throughout retirement.

# The social sustainability indicators

- Assessing the twin constraints:

  - **Intergenerational balance** – express net pension wealth of future generation of hypothetical individuals as % of net pension wealth of current generation.

  - **Financial sustainability** – multiply average gross pension wealth expressed in terms of the average national wage by the ratio of beneficiaries to contributors. This gives the required contribution rate to balance pension system over medium term.

# The pension systems studied

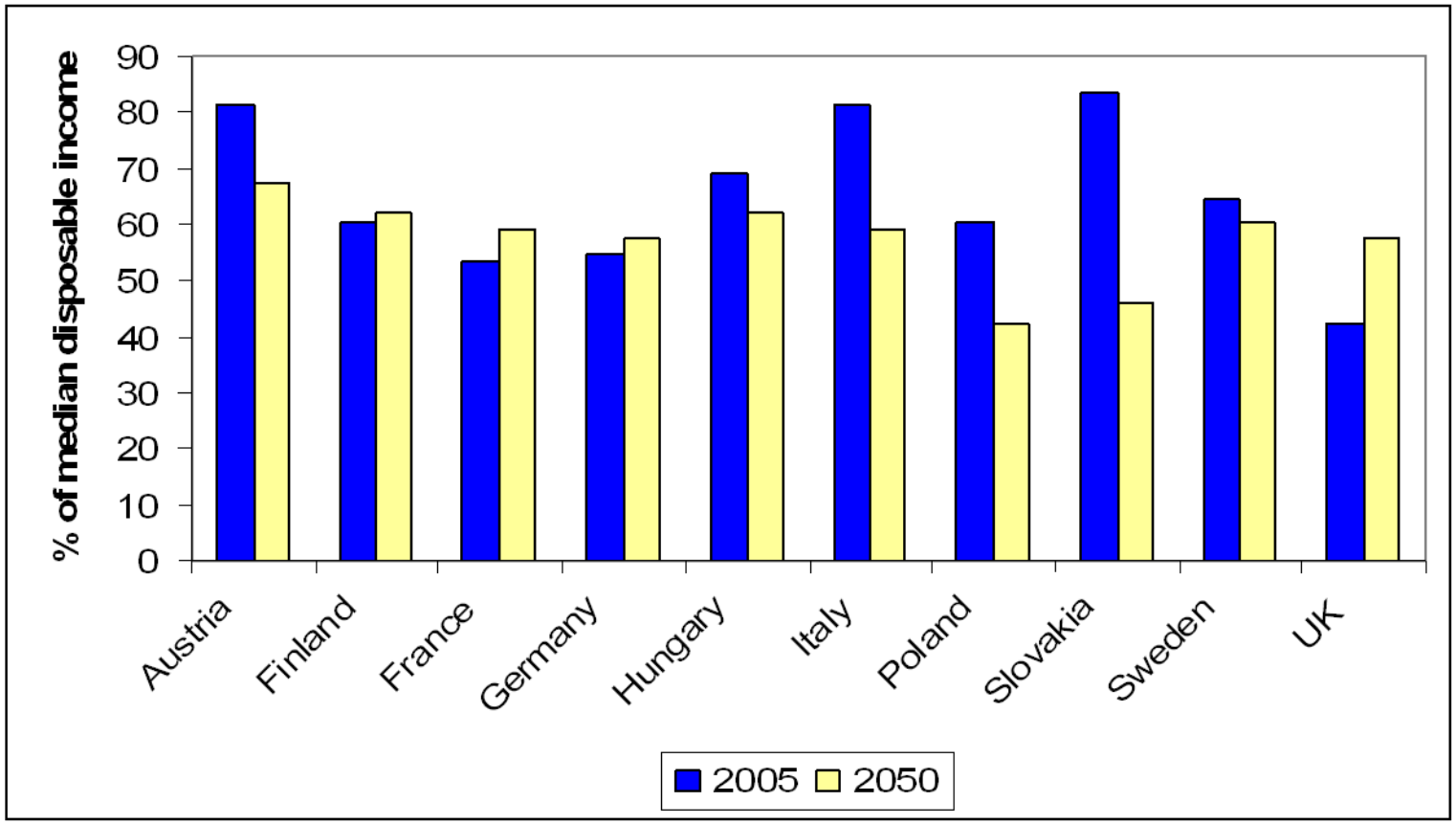
- Study covers countries from all the usual typologies: Austria, France and Germany (Conservative); Hungary, Poland and Slovakia (Eastern European); Finland and Sweden (Social Democratic); Italy (Mediterranean); UK (Liberal).

- There is a mix of parametric and systemic reforms: Sweden, Italy and Poland (move to NDC system), Slovakia and Hungary (funded second pillar pensions), and Austria, France, Germany, Finland and UK (parametric changes to PAYG).

- These systems cover 70% of EU27 population.

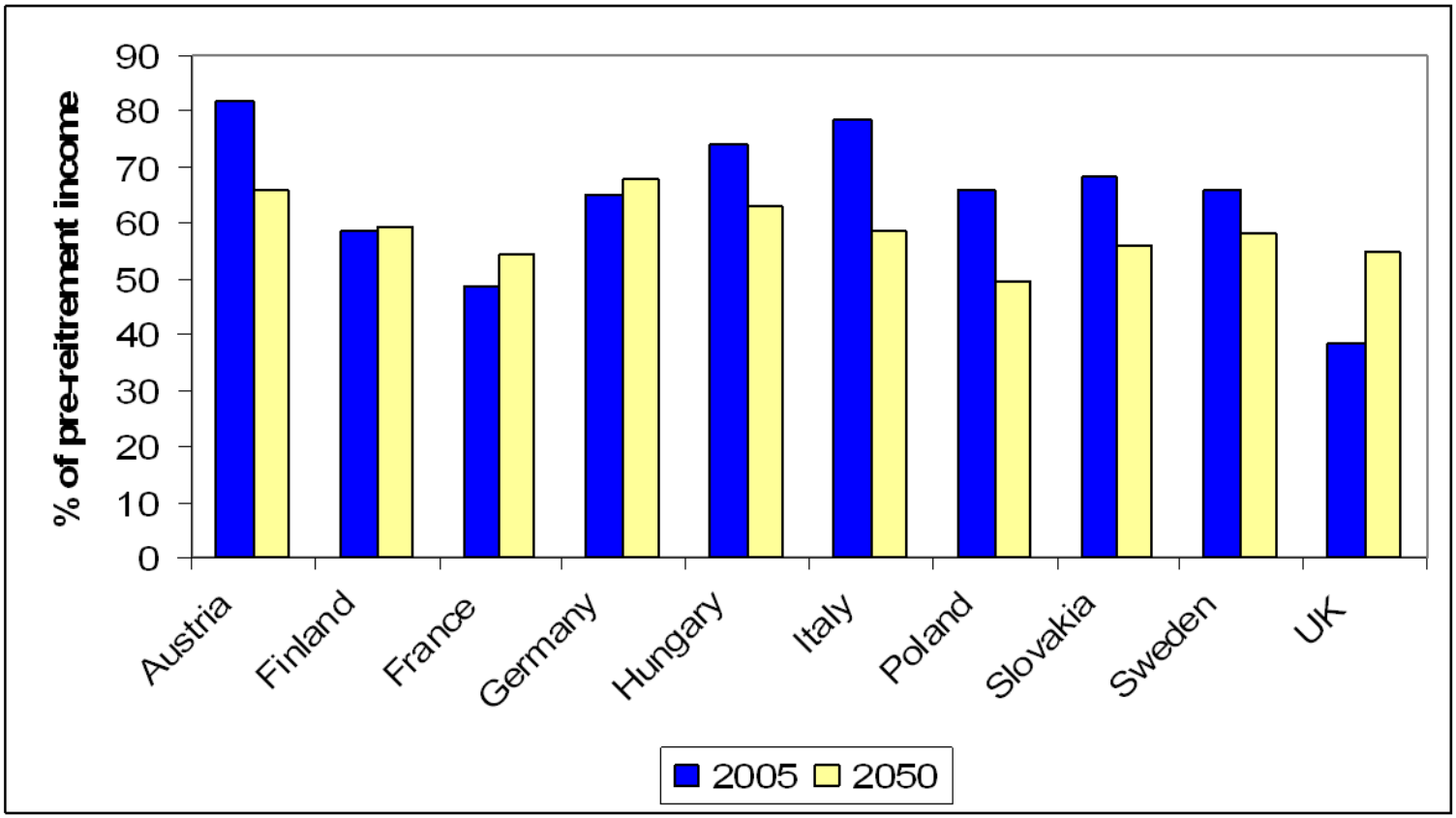
# The poverty thresholds achievable pre- and post-reform

- Reforms have reduced the poverty alleviation function, but this, generally, remains strong.



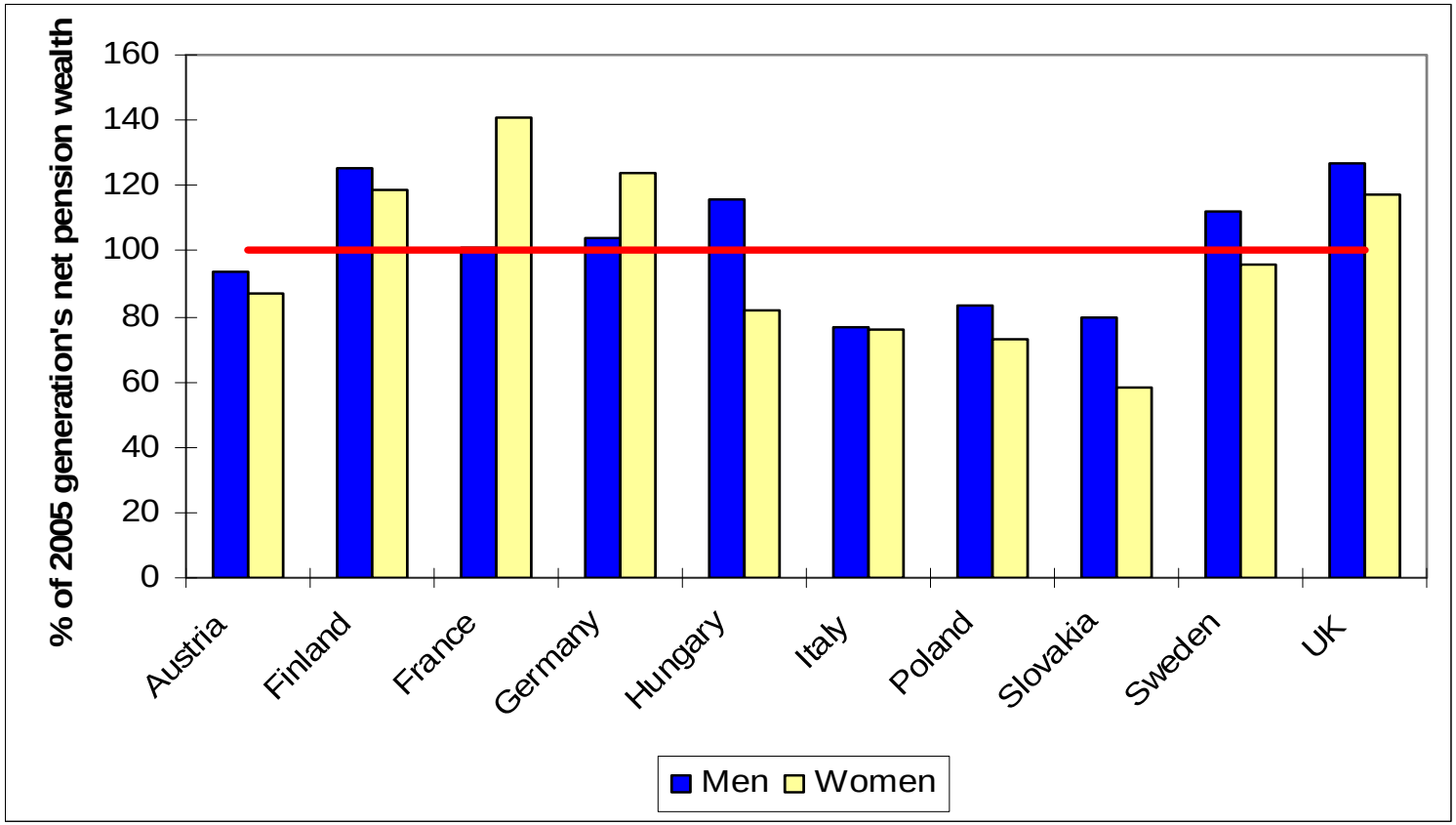
# The replacement rates achievable pre- and post-reform

- The decline in replacement rates tended to be stronger than in the poverty alleviation function.



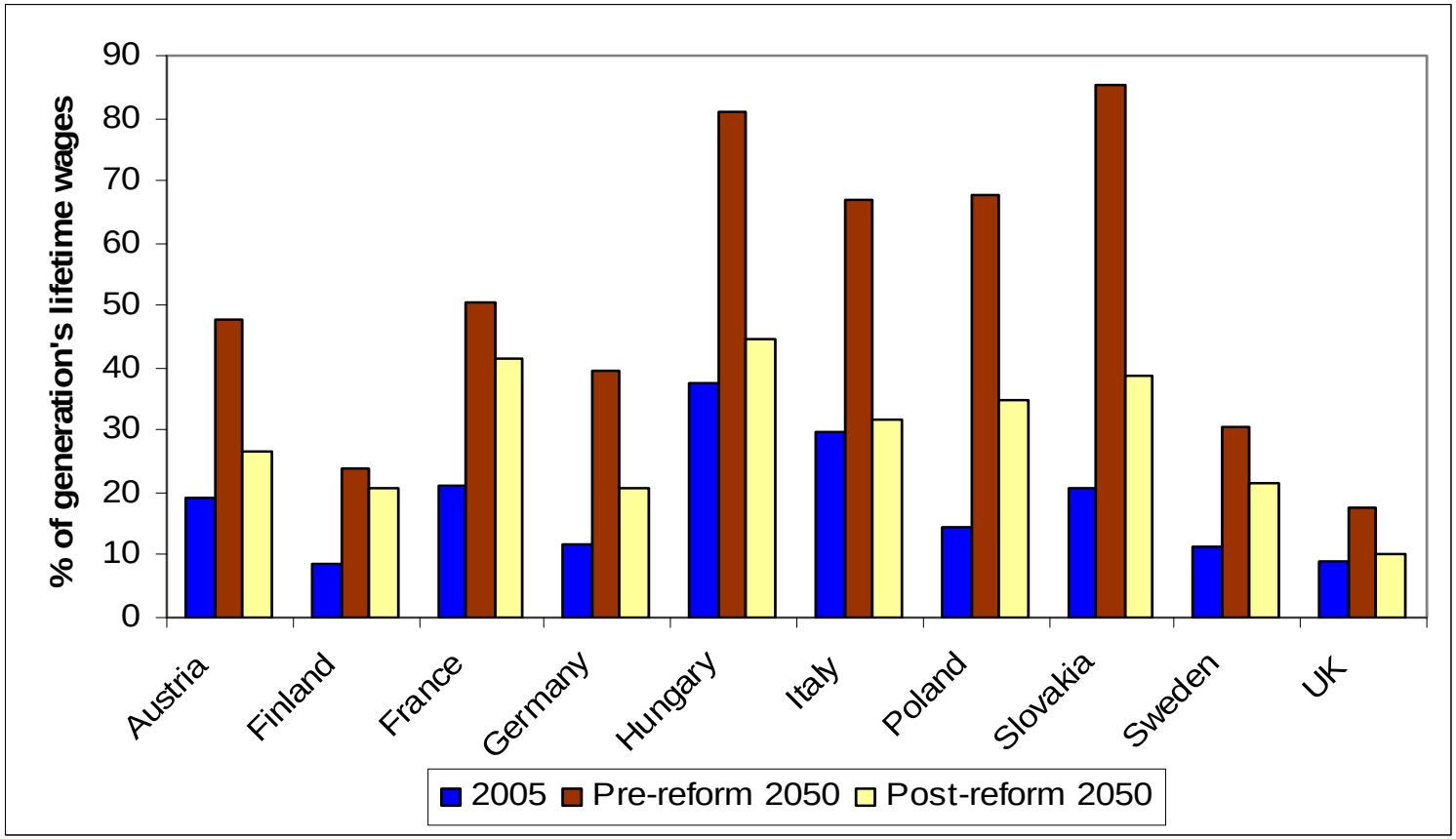
# The net pension wealth of the different generations pre- and post-reform

- Despite reforms, generally future generations will have similar pension wealth, due to longevity.

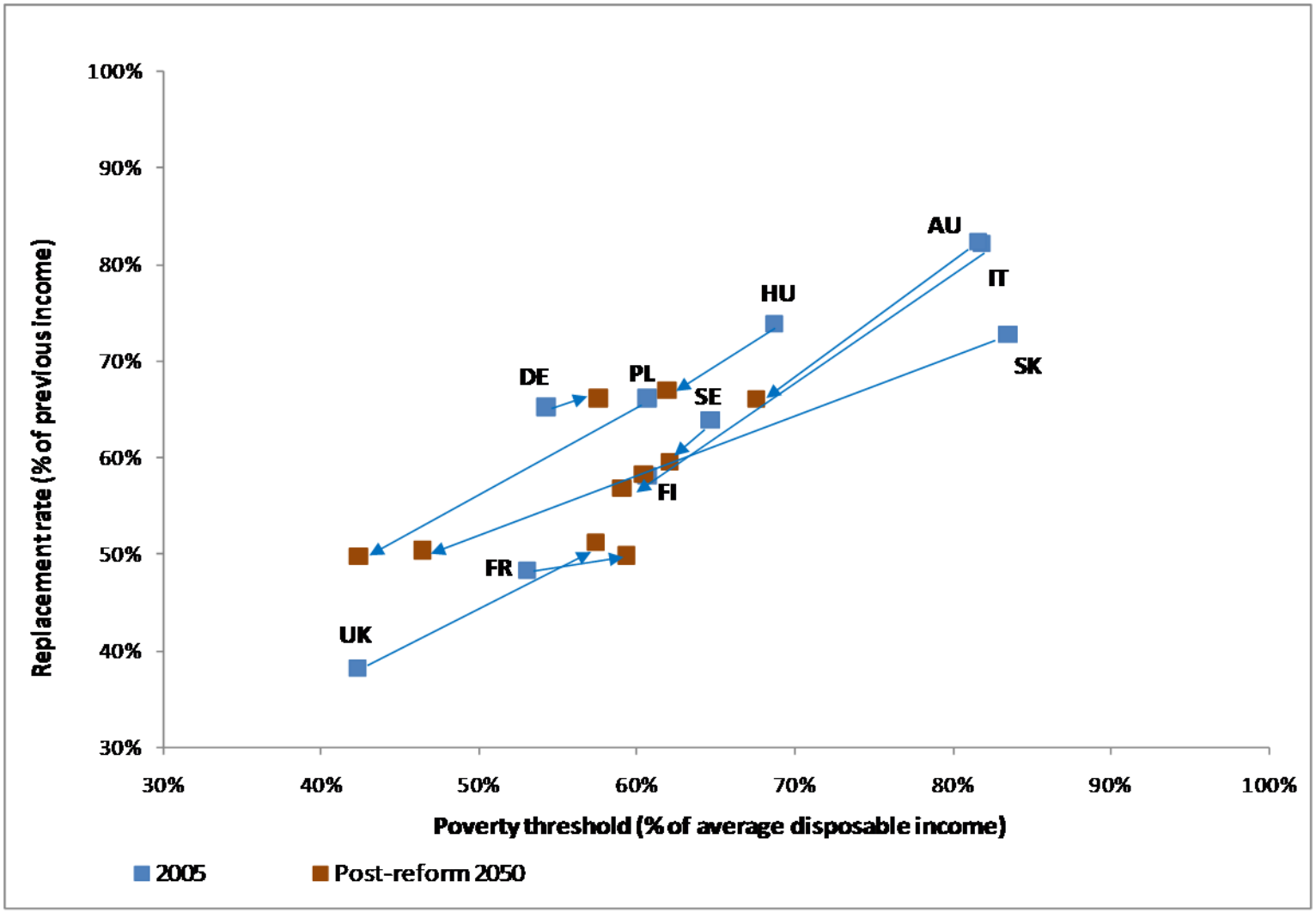


# Contribution rates needed to finance pension transfers pre- and post-reform

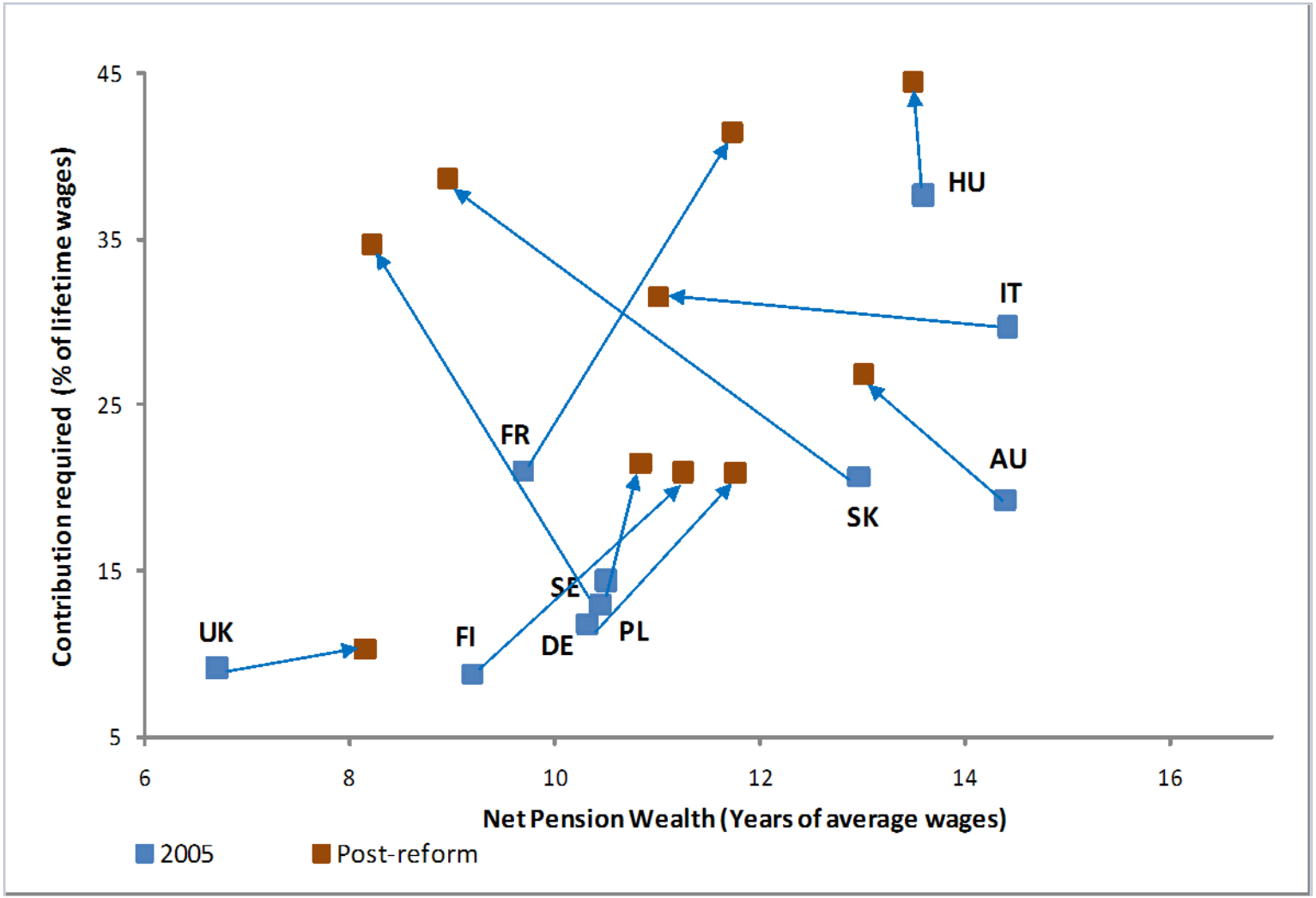
- The reforms have reduced the required rise in contribution rates, but systems still cost more.



# Evolution of achievement of system objectives – broad convergence



# Evolution of pressure on constraints – response dependent on challenge faced



# Full-careers may give misleading results – particularly for systemic reforms

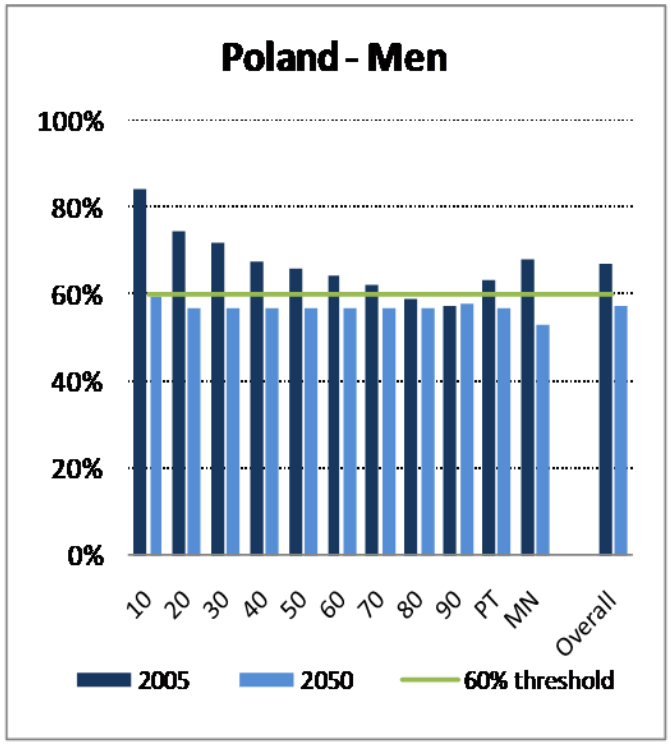
- Labour participation can influence strongly pension outcomes and can offset effects of reforms.

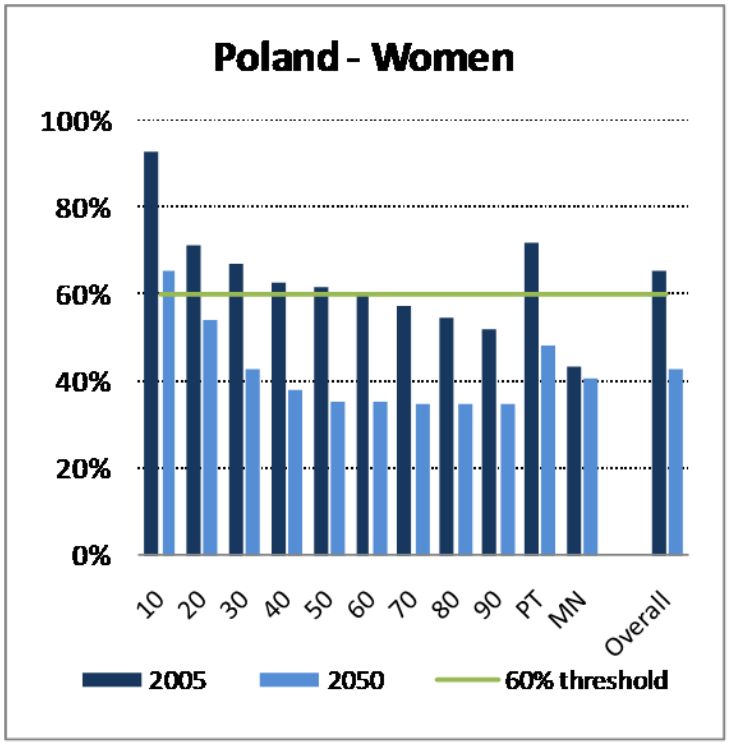
**Poverty thresholds (%) financed by pension wealth (women)**

| | Full-careers assumption | | | Actual-careers assumption | | |
|---|---|---|---|---|---|---|
| | 2005 | 2050 | Change in p.p. | 2005 | 2050 | Change in p.p. |
| Austria | 69 | 70 | 1 | 68 | 61 | -7 |
| Finland | 70 | 64 | -6 | 57 | 58 | 1 |
| France | 67 | 59 | -8 | 44 | 59 | 15 |
| Germany | 55 | 52 | -3 | 48 | 56 | 8 |
| Hungary | 73 | 79 | 6 | 68 | 59 | -9 |
| Italy | 79 | 71 | -8 | 68 | 50 | -18 |
| Poland | 68 | 39 | -29 | 55 | 35 | -20 |
| Slovakia | 82 | 62 | -20 | 74 | 41 | -33 |
| Sweden | 60 | 54 | -6 | 59 | 56 | -3 |
| UK | 41 | 60 | 19 | 39 | 56 | 17 |

# Further results – different impacts on different individuals

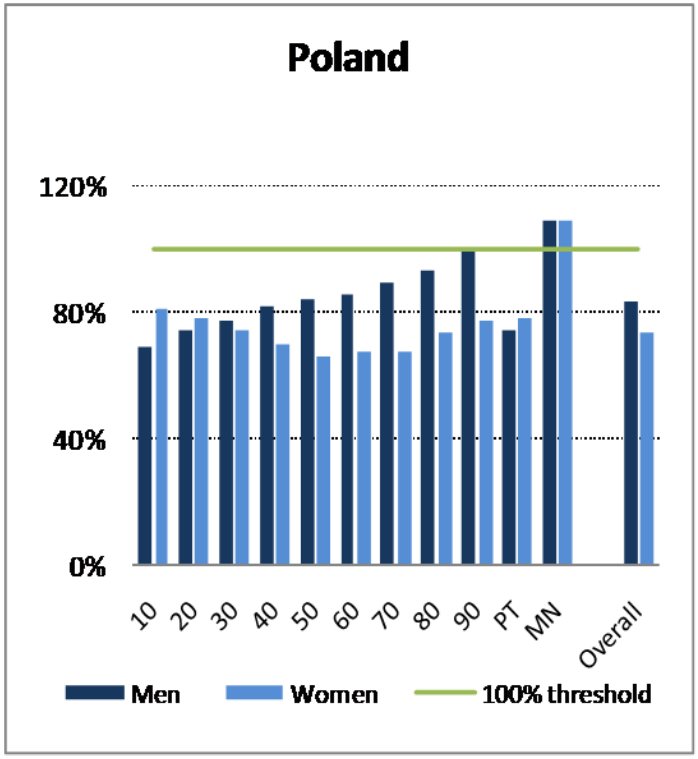
**Replacement rates by wage decile**

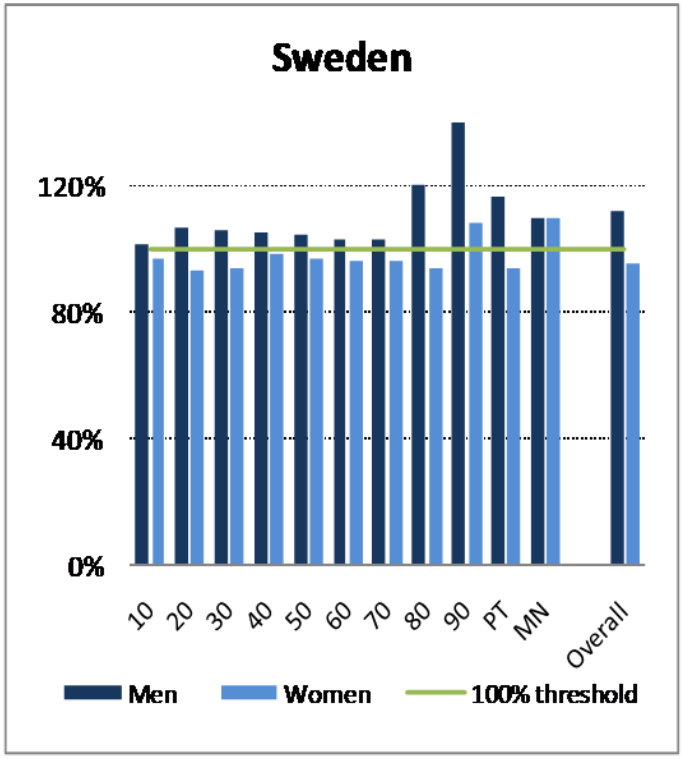


# Further results – similar systemic reforms can have different effects

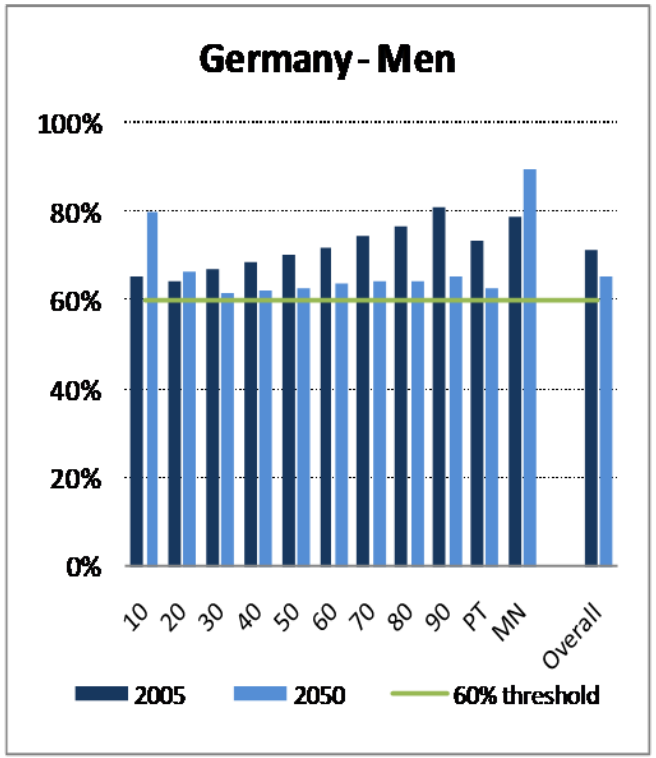
**Net pension wealth of 2050 generation compared to 2005 generation**

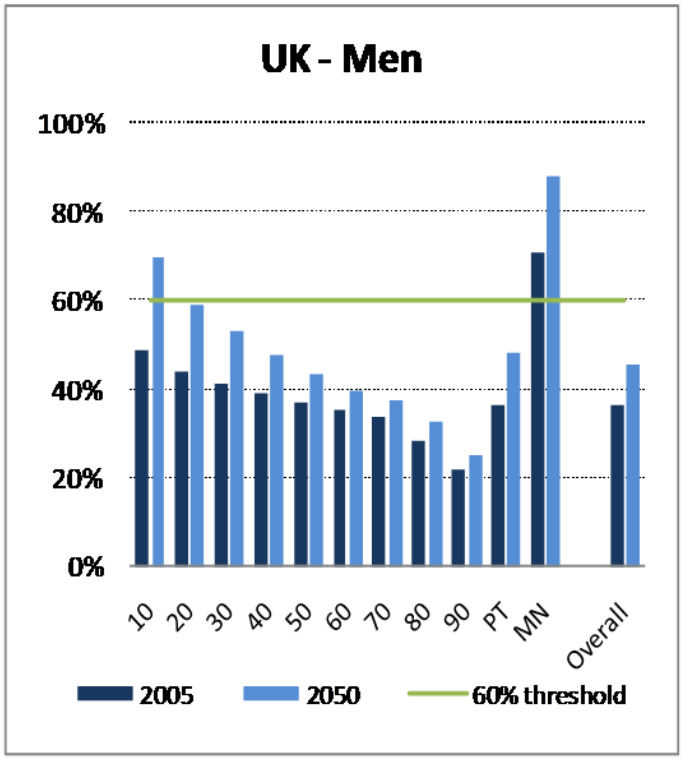


# Further results – reforms have either changed or focused more system aims

**Replacement rates by wage decile**



# Accommodating the pension reforms by saving more

- To achieve the same replacement rate as before, men on low incomes in some countries would need to save a significant % of their income.

**Required wage contribution (%) in additional saving (men) – rate of return 5.5%**

| | 10th Decile | 20th Decile | 30th Decile | 40th Decile | 50th Decile | 60th Decile | 70th Decile | 80th Decile | 90th Decile | Part-time |
|---|---|---|---|---|---|---|---|---|---|---|
| Austria | 7.6 | 7.6 | 7.6 | 7.5 | 7.7 | 8.0 | 8.5 | 9.2 | 8.0 | 8.7 |
| France | - | - | 2.6 | 4.8 | 4.8 | 4.6 | 5.1 | 4.7 | 4.0 | 5.1 |
| Germany | - | 0.6 | 0.8 | 1.1 | 1.4 | 1.8 | 2.3 | 3.0 | 4.0 | 1.4 |
| Hungary | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | - | - | - | - |
| Italy | 13.3 | 13.4 | 13.5 | 13.5 | 13.7 | 13.9 | 13.9 | 13.6 | 13.2 | 13.6 |
| Poland | 8.9 | 7.2 | 6.3 | 4.7 | 4.3 | 3.7 | 2.8 | 1.8 | 0.6 | 6.4 |
| Slovakia | 12.6 | 12.9 | 13.1 | 13.0 | 11.5 | 7.5 | 3.6 | - | - | 12.9 |
| Sweden | 3.4 | 2.1 | 2.2 | 2.4 | 2.5 | 2.6 | 2.7 | - | - | - |

# Accommodating the pension reforms by working longer

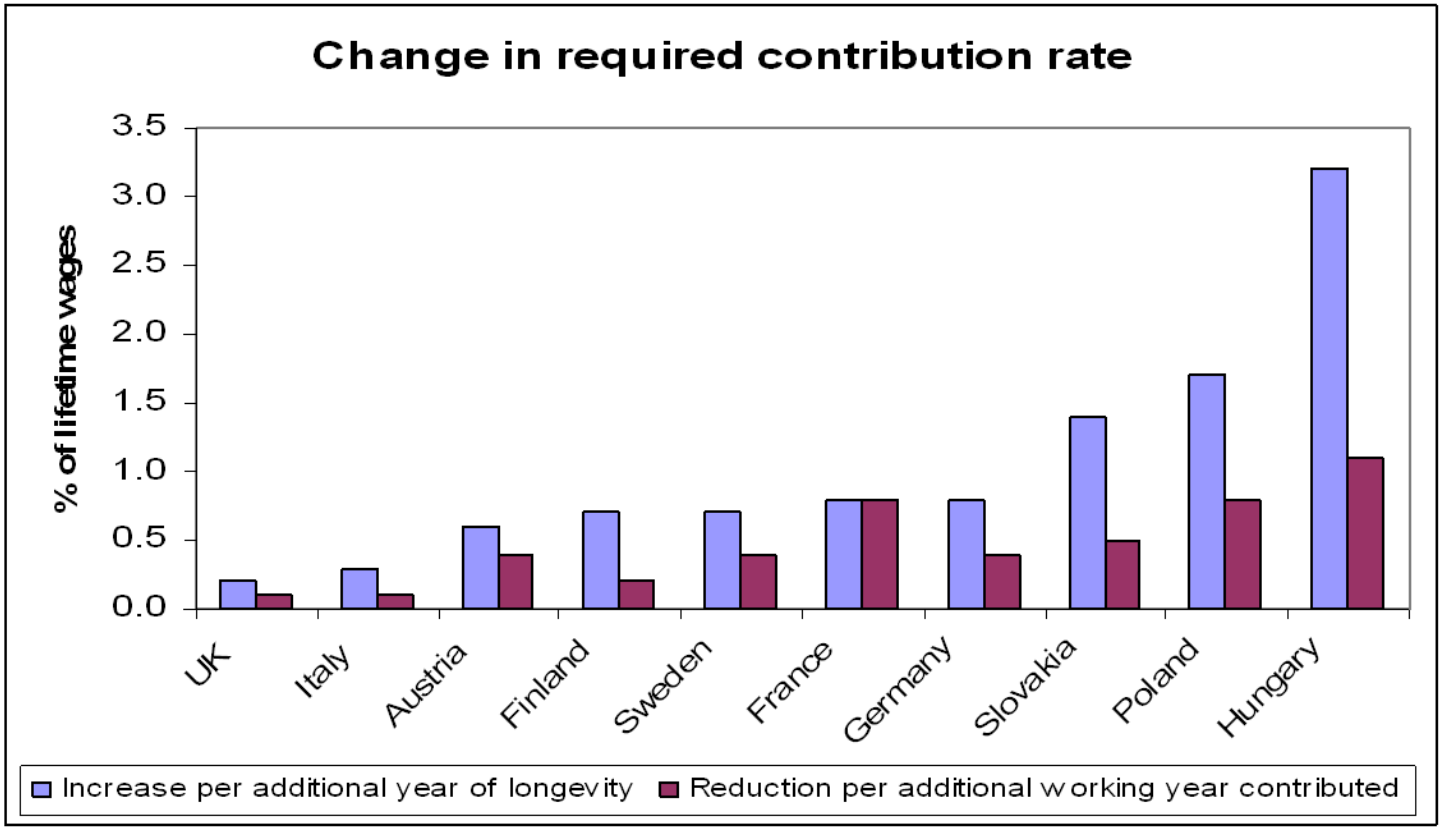
- Longer careers are key to offset lower state pension generosity, especially for those on low incomes.

**Poverty thresholds (%) financed by pension wealth (men)**

| | 2005 | Change by 2050 under assumed worklife | Change if worklife 1 year more than assumed | Change if worklife 3 years more than assumed | Change if worklife 5 years more than assumed |
|---|---|---|---|---|---|
| Austria | 95 | -21 | -20 | -17 | -15 |
| Finland | 64 | 2 | 3 | 10 | 11 |
| France | 63 | -4 | -2 | 2 | 5 |
| Germany | 61 | -2 | -2 | -1 | 1 |
| Hungary | 70 | -5 | -4 | 2 | 5 |
| Italy | 95 | -27 | -25 | -23 | -21 |
| Poland | 66 | -16 | -14 | -13 | -11 |
| Slovakia | 93 | -42 | -38 | -32 | -26 |
| Sweden | 70 | -5 | -4 | -1 | 0 |
| UK | 46 | 13 | 13 | 14 | 15 |

# Impact of longevity shocks

- Despite reforms, in most countries, unanticipated longevity rises could still result in financing issues.



# Conclusions – What does this method contribute to existing literature

- It looks at sustainability in a holistic way and focuses on aims and constraints. Ignoring impact on aims is as short-sighted as ignoring impact of reforms on constraints. This approach shows the trade-offs and increases the transparency of results.
- It takes into account longevity – which in spite being the main determinant of the size of pension transfers tends to be ignored. Previous studies ignored the effects of reforms to indexation.
- It provides a framework within which to understand what risks different reforms can create. It facilitates the comparison of different systems and focuses on outcomes. It can be adapted to assess different benchmarks for outcomes. Can be extended to look at gender and distributional effects.

# Conclusions – What does this method contribute to understanding reforms

- It shows impacts on individuals differ by income and gender. While systems should remain adequate, some countries are abandoning their previous aims, and this could pose risks for those on low incomes.
- It shows that Governments have tended to sacrifice income smoothing rather than poverty alleviation.
- It shows that Governments have sought to reduce the future burden on taxpayers but generally maintained the size of pension transfers unchanged.
- Labour participation can help undo generosity cuts.
- Longevity still poses large fiscal risks, which can be tackled by increasing the pension age. Cutting benefits is risky, except if system is very generous. Saving more is difficult for those on low incomes.