

# Effects of flat tax reforms in Europe on inequality and poverty

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# Outline

- Background and motivation
- EUROMOD – tax-benefit microsimulation model
- Flat tax parameters
- Simulation scenarios
- Results:
  - Income inequality
  - Poverty rates
  - Winners and losers
- Conclusions

# Background

- Flat income tax:
  - Single positive marginal rate + personal allowance
- Increasingly spreading:
  - 22 countries in 2007, half in Eastern Europe
  - no Western European country (except Iceland)
- Potential benefits:
  - Enhance labour supply incentives
  - Improve tax compliance
  - Simplify system & lower administration costs
- Main disadvantage:
  - Increasing inequality → less support from low & middle income class?

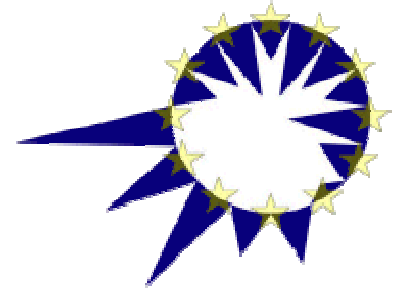
# Aim

Empirical analysis of the distributional effects of different flat tax designs:

- comparative – 10 Western European countries
- systematic approach to flat tax parameters

→ Feasibility of flat tax reforms in terms of

- inequality and poverty
- gainers/losers
- labour supply incentives



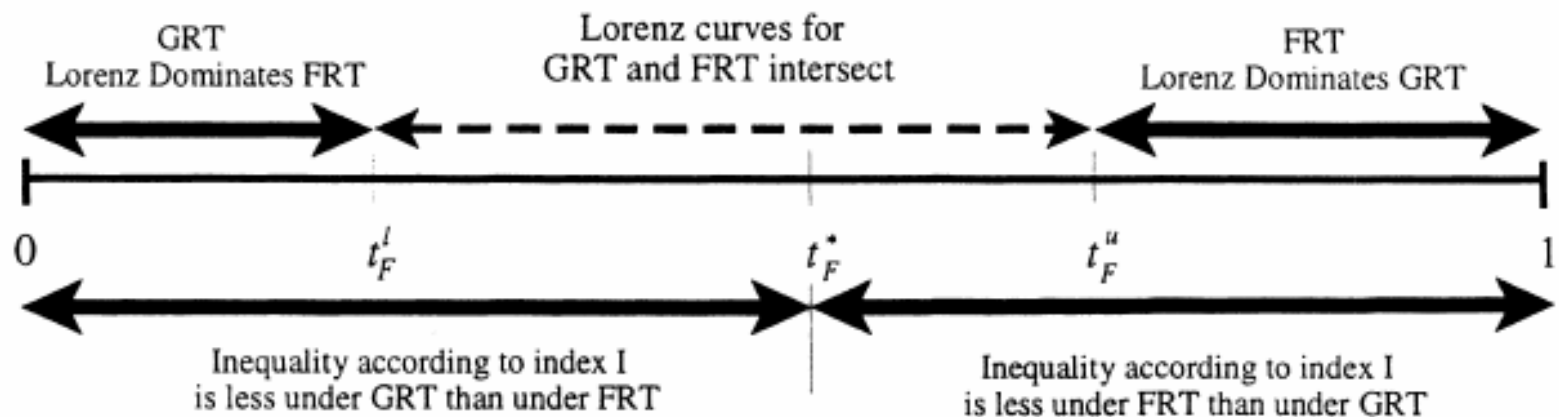
# EUROMOD

- Static tax-benefit microsimulation model for EU-15
- Calculates benefit entitlements and tax liabilities for a representative micro-data sample of households
- Covers monetary incomes, most of direct taxes and cash benefits
- Assumes full benefit take-up, no tax evasion

We model a number of hypothetical flat tax reforms using the latest wave – 2003 (10 countries)

# Flat tax parameters

- Davies & Hoy (2002):
  - revenue neutral flat tax reforms (can choose one parameter)
  - inequality monotonically declining in the tax rate under FT
  - if tax rate too low then after-tax Lorenz curve of GRT dominates the one of FRT
  - if tax rate high enough then FRT Lorenz dominates GRT
  - critical values for flat tax rates:  $t_F^l, t_F^u, t_F^*(I)$



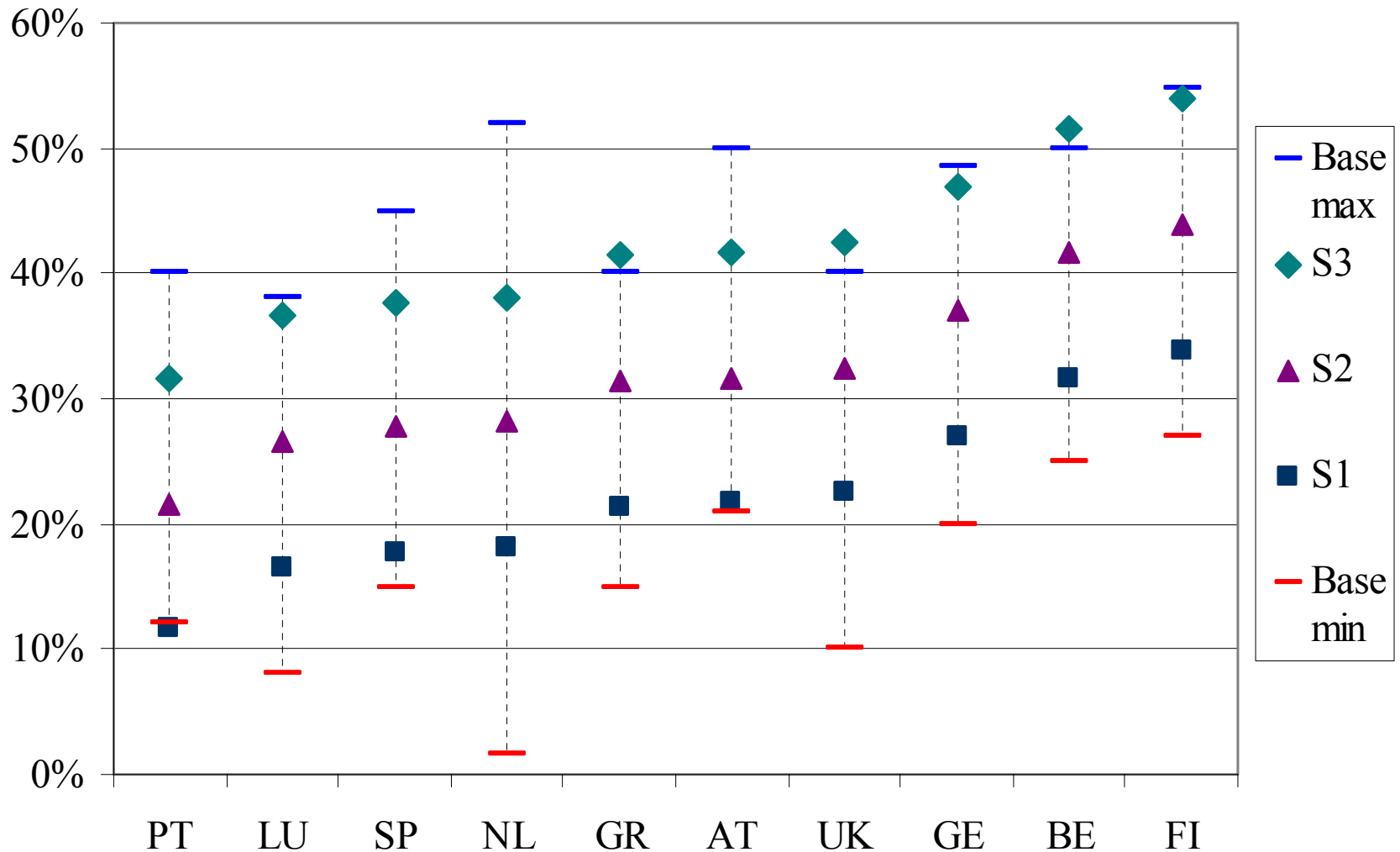
# Flat tax rates

- Lower boundary → revenue neutral flat tax rate with unchanged personal allowance
  - FRT rate higher than lowest GRT rate
- Upper boundary → individuals with highest income pay the same tax as under GRT
  - FRT rate lower than highest GRT rate
  - FRT allowance higher than under GRT
- Critical value (‘break-even’) → depends on inequality index
  - Chiu (2007): for an index exhibiting downside inequality aversion (or transfer sensitivity) determined by the strength of the index’s downside inequality aversion against its inequality aversion, e.g. Generalised Entropy measures  $E(\alpha)$  – higher  $\alpha$  (lower aversion) requires higher FTR

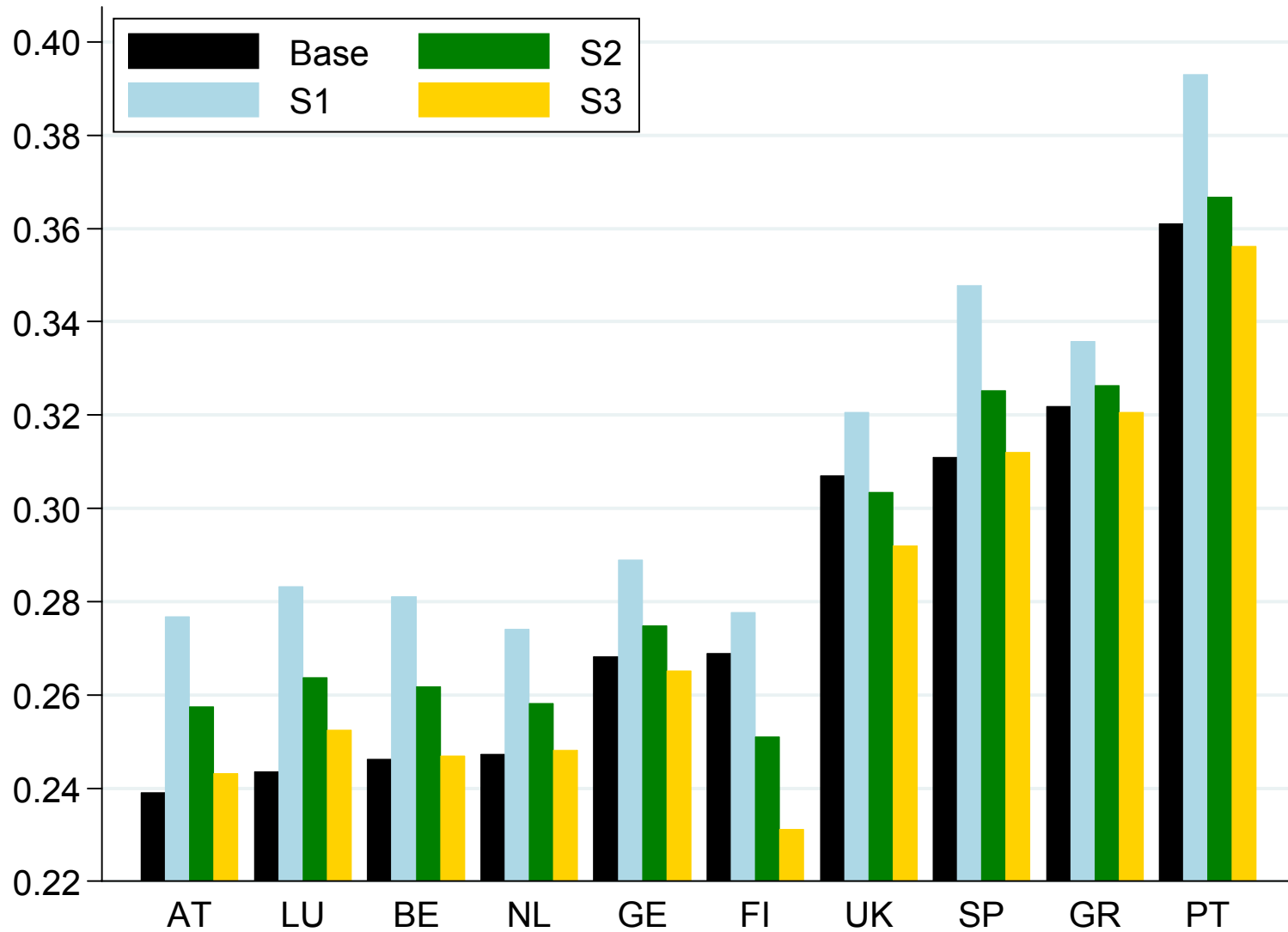
# Simulated flat tax scenarios

- Baseline = existing tax-benefit systems in 2003
- Replace all existing income tax deductions, allowances and credits with a **single personal allowance** and graduated rate with a **flat rate**
  - Keep only refundable tax credits
  - Social insurance contributions unchanged
  - Tax bases not harmonised (yet)
- Simulated scenarios (all revenue neutral):
  - S1: personal allowance in the existing amount (or equivalent)
  - S2: flat tax rate increased by 10pp compared to S1
  - S3: flat tax rate increased by 20pp compared to S1

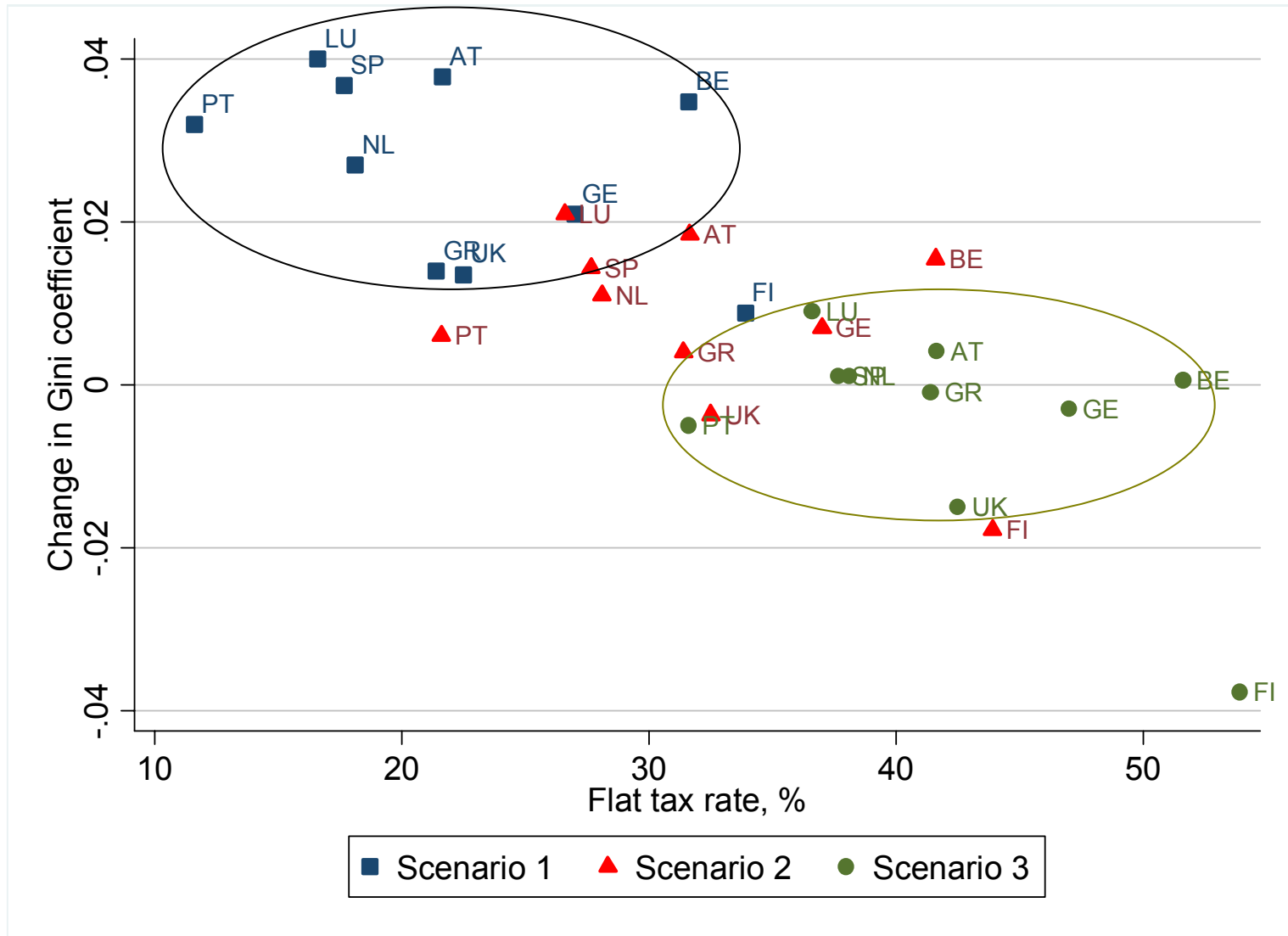
# Flat tax rates in simulated scenarios



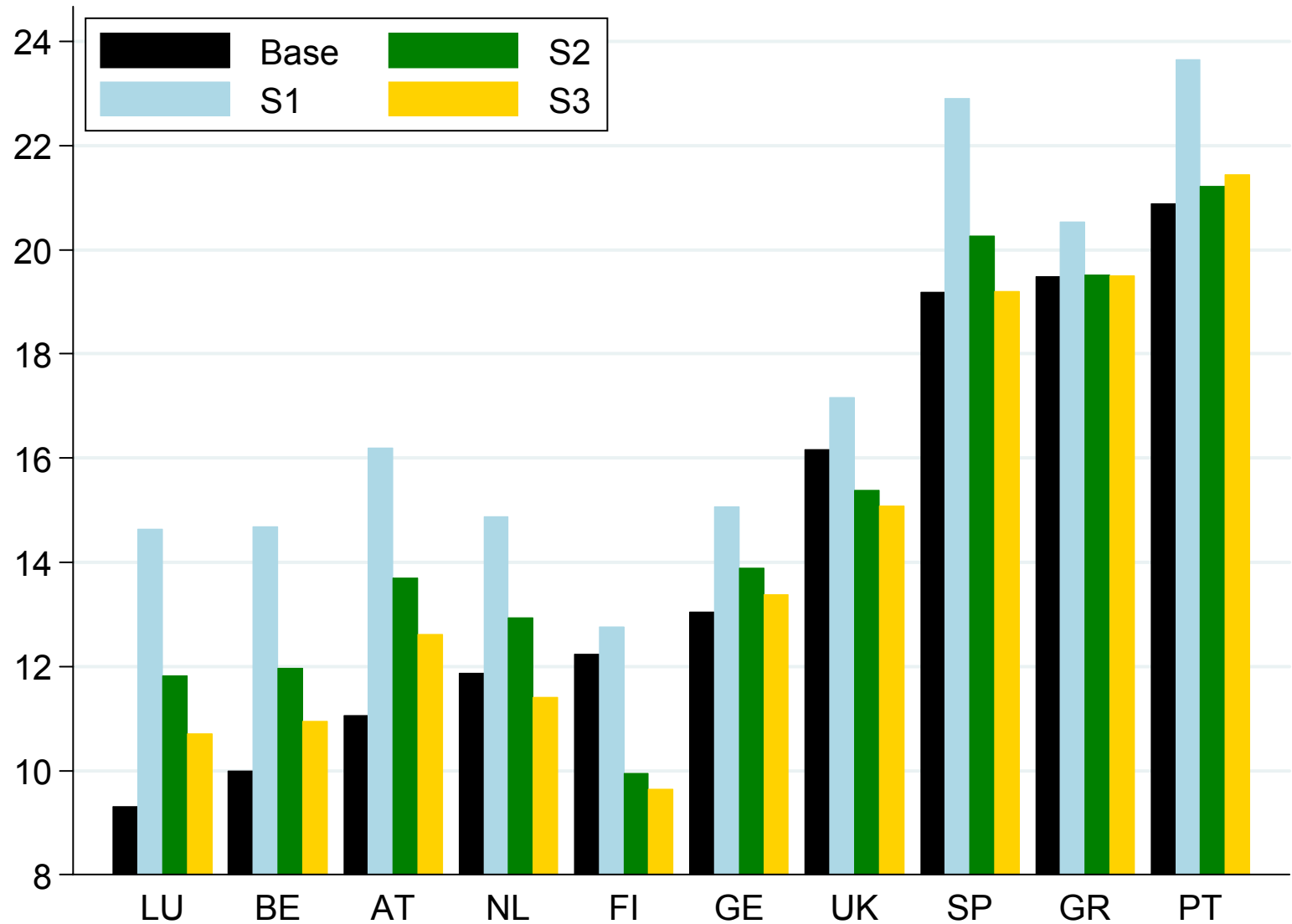
## Results: income inequality (Gini coefficient)



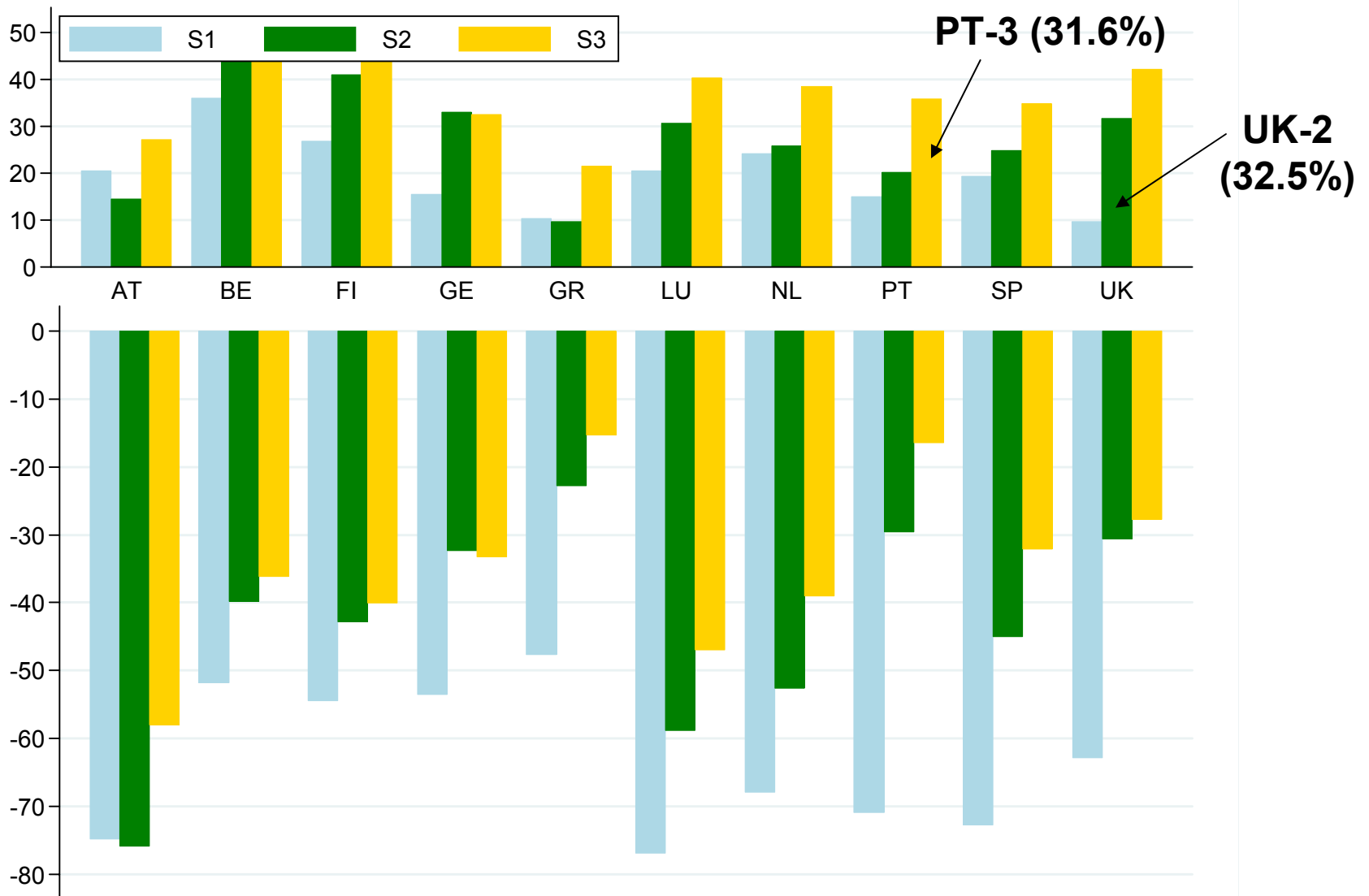
# Results: income inequality (Gini coefficient)



## Results: poverty rates (head count ratio), %



# Results: winners and losers, % (disposable income)



# Conclusions

- Flat tax rates which result in higher inequality and poverty are relatively low:
  - benefit mainly those with high incomes at the expense of the low and middle income households
  - reasonable for labour supply incentives
- Flat rates necessary to keep the inequality levels unchanged are rather high, therefore discouraging labour supply
- Overall, may explain why flat taxes have not been implemented in countries with well-established welfare systems

# Further work

- Calculate METRs
- Specify flat tax rate boundaries
- Calculate confidence intervals for indices (bootstrapping)
- Include labour supply responses

Thank you!

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