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Using EUROMOD with administrative data in Greece: lessons and prospects

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Outline

- Motivation, context and timeline

- Data description

- Comparison with SILC data / EUROMOD results

- Applications

- Lessons and prospects

Motivation and context

- The Greek Ministry of Finance was lacking the technical tools needed for the assessment of the distributional impact of tax-benefit reforms

- Solution: technical assistance from JRC to the Greek Council of Economic Advisors (SOE)

- 2 capacity-building projects, funded by DG-Reform:
  - 1st project: one year detachment of F. Picos in SOE (2017) & follow-up (2018)
  - 2nd project: April 2019 – May 2021

Motivation and context

- Main achievements:
  - Construction of an alternative version of EUROMOD (EM-admin) using administrative microdata from tax returns
  - Incorporation of EM-admin in the master version of EUROMOD
  - EUROMOD routinely used for negotiations with international institutions and the distributional assessment of tax-benefit policy reforms in Greece

Timeline

- 2017
  - Construction of EM-admin using administrative microdata from a sample of 2016 tax returns

- 2018
  - A newly created microsimulation team in SOE maintains and uses EM-admin to inform and support policy-making with technical assistance from JRC

- 2019
  - Acquisition of a new sample of 2018 tax returns
    - Simulation of the (very complex) imputed income policy, made possible with this dataset

Timeline

- 2020
  - Inclusion of EM-admin in the master version of EUROMOD
    - Inclusion made possible with the use of the 'Extensions' functionality
  - But: the microsimulation team in SOE becomes significantly smaller

- 2021
  - Updated samples of 2018 and 2020 tax returns received
    - Same observations followed across years
  - New data with information on social insurance contributions received (EFKA data)
    - Includes employees, self-employed and farmers of the tax data

Tax data: description

- 2016 tax returns (2015 incomes)
  - 20% simple random sample // 1.2 million tax returns // 2.1 million individuals in 800,000 households
  - ≈300 variables

- 2018 and 2020 tax returns (2017 and 2019 incomes)
  - Panel structure: new waves will be added every two years
  - ≈9% simple random sample + 100% of top 1% // 650,000 tax returns // 1.1 million individuals in 480,000 households
  - ≈570 variables: more granularity for incomes and objective expenditures

Tax data: pros

- Covers the whole Greek population (+ non-residents that fill a PIT return)
- Information provided at individual level, but linked to tax return and household levels
    - Relatively straightforward to create standard EUROMOD identifiers & compute standard distributional measures
- Very large sample sizes and full info for the richest 1%
- Highly detailed and disaggregated information on market incomes (taxable and non-taxable) and imputed income
    - Very precise simulation of tax policies
- Information on benefits, (some) assets and (some) expenditures

Tax data: cons

- Only declared incomes, which can be lower than true incomes
- All incomes provided net of social insurance contributions
  - Social insurance contributions had to be computed through a grossing-up procedure
- Socio-economic information not as rich as in SILC
  - Limitation to simulate some tax-benefit policies and analyse the impact of reforms on population groups with specific characteristics
- Limited accessibility
  - Only for SOE and JRC (after signing a confidentiality agreement)
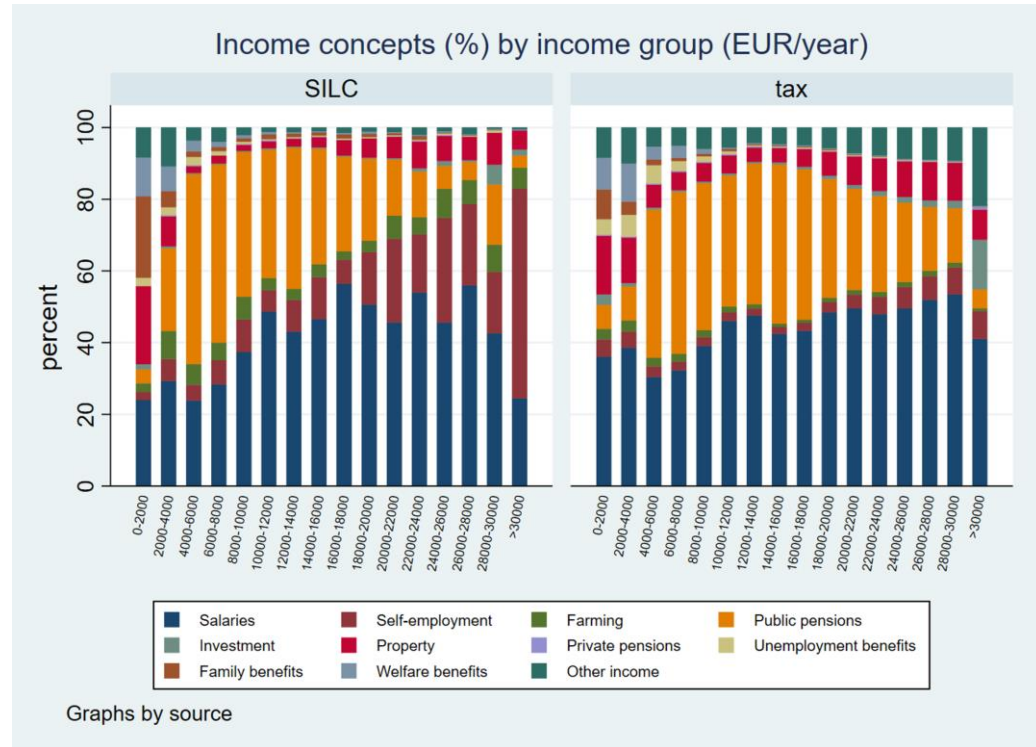
EFKA data: description

- 2018 and 2020 EFKA data (2017 and 2019 SIC)
    - Recently received, currently being checked
    - Information on social insurance contributions for all(?) individuals whose PIT return had been sampled
    - They include richer socio-economic information:
        - Info on gender & improved information on age
    - They also include:
        - Gross monthly incomes
        - Exact months in which individuals are paying SIC and number of insured days per month
        - Info on full-time/part-time employment
        - Detailed information on individuals' social insurance fund
        - Rich information on individuals' employers
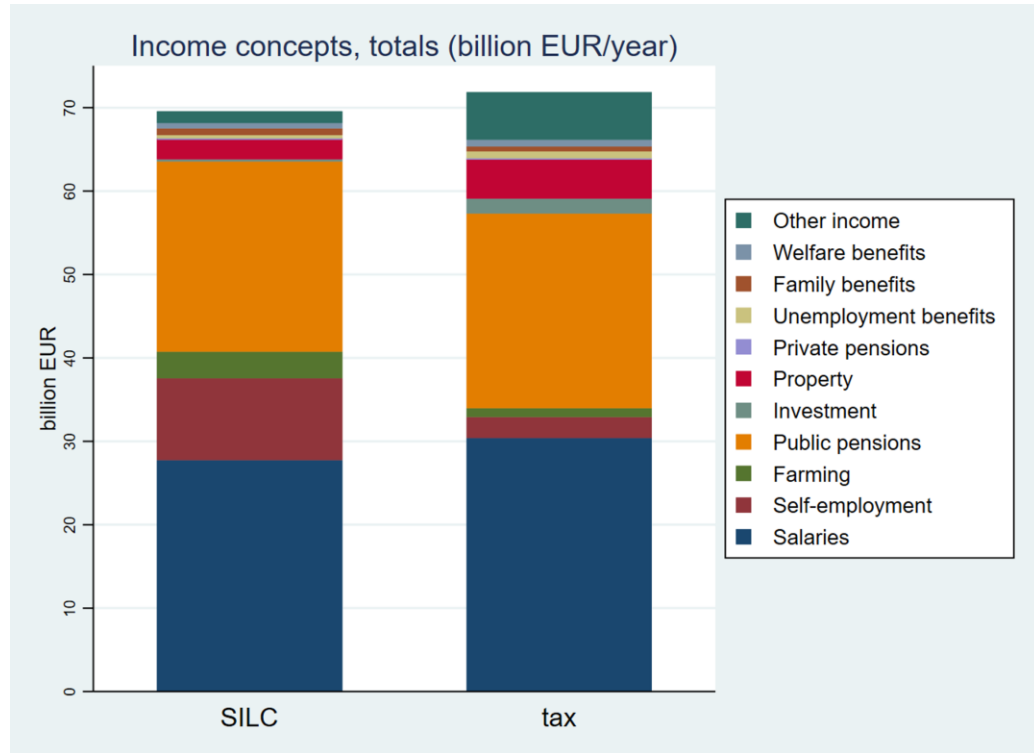   - Ideal for research on precarious work

Comparison with SILC
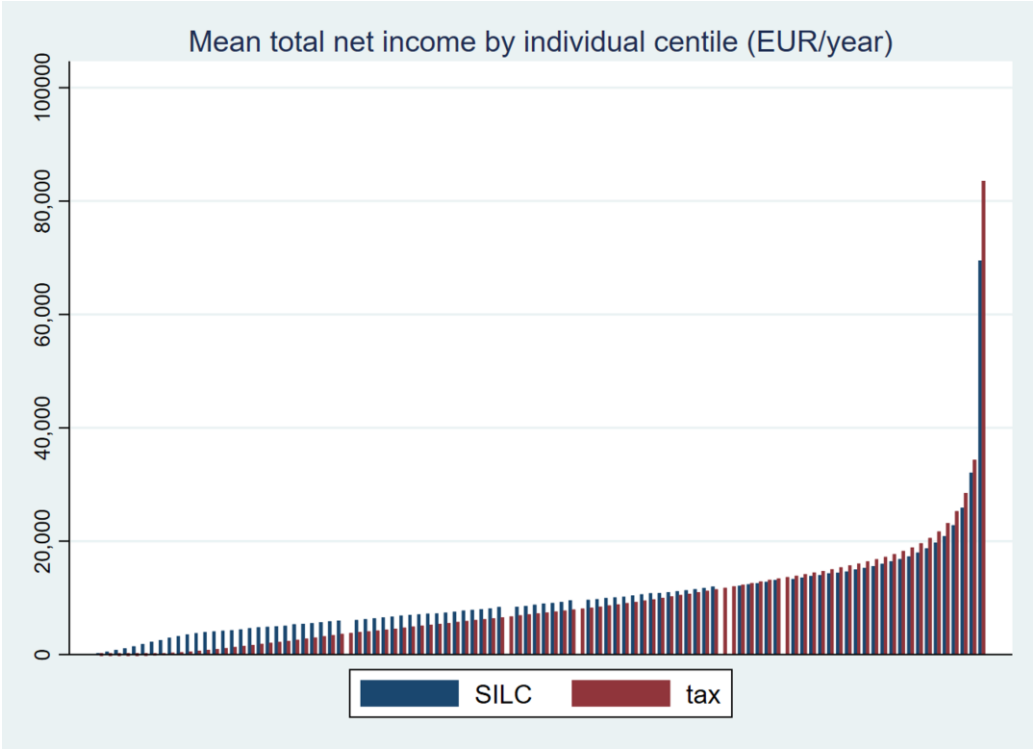
Mean total net income by individual centile (EUR/year)

Source: EU-SILC 2018 (2017 incomes) and 2018 tax declarations (2017 incomes)

Comparison with SILC

Income concepts (%) by income group (EUR/year)

Graphs by source

Source: EU-SILC 2018 (2017 incomes) and 2018 tax declarations (2017 incomes)

Comparison with SILC

Income concepts, totals (billion EUR/year)

Source: EU-SILC 2018 (2017 incomes) and 2018 tax declarations (2017 incomes)

EUROMOD results: disposable income (2017)

Mean equivalised disposable income by income decile (EUR/year)

Source: EUROMOD Version I3.86

EUROMOD results: validation ratios (2017)

	with SILC data	with tax data
personal income tax	0.79	1.04
solidarity contribution	0.52	0.94
total pensions	0.88	0.98
total benefits	0.78	1.07
AROP rate	0.92	1.48
Gini coefficient	0.95	1.24

Notes: 1. Validation versus official statistics (administrative data, Eurostat)
2. Disability pensions not included in the pensions' comparison

Source: EUROMOD Version I3.86

Applications

- 2017
  - Assessment of important benefit reforms in the context of the Third Adjustment Programme for Greece
    - Provision of social dividend
    - Introduction of Guaranteed Minimum Income

- 2018
  - Assessment of social dividend provision
  - Assessment of child benefit reform
  - Assessment of housing benefit introduction
  - SILC-based EUROMOD simulations included in the Greek Draft Budgetary Plan for the first time (since then: routinely included)

Applications

- 2019
  - Assessment of birth grant introduction
  - Assessment of a major PIT reform in the context of the Enhanced Surveillance Framework for Greece
  - Assessment of the country's main property tax reform

- 2020
  - Taxation of imputed income
  - Assessment of the distributional impact of Covid-19 & its effect on flagship social benefits (SILC-based)

- 2021
  - Assessment of the distributional impact of (a) an increase in minimum wage; (b) an increase in female labour market participation (SILC-based)

Lessons and prospects

- Inclusion of administrative data in EUROMOD-EL: in general, a worthwhile investment

- Main advantages:
  - Fiscal simulation estimates much closer to official estimates
  - Easier for policy makers/politicians to accept its use
  - EUROMOD became an integral part of the Greek policy-making

- Main disadvantages:
  - Distributional estimates different from official estimates
  - Strong restrictions in data dissemination

Lessons and prospects

- Lessons learnt:
  - Having one model working on both survey and tax data preferable than having two separate models
  - Establishing a good working relation between the relevant Ministry and JRC is important, but not sufficient to guarantee that this (major) investment pays off in the future

- Way forward:
  - Facilitation of tax data dissemination
  - Institutionalisation of administrative versions of models
    - Disentangling them from the (unpredictable) national political processes
    - Integrating them into the (more predictable) EU policy-making processes

Thank you very much for your attention!