

A short introduction to microsimulation: How can it help?

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Outline

- Microsimulation – an introduction in one slide
- Tax-benefit microsimulation
- What is special about EUROMOD?
 - A little history
 - National models
- EUROMOD – ways it can be used
- A vision for the future



Microsimulation – an introduction in one slide

- Microsimulation is a general term for modelling the behaviour and interactions of micro units (persons, households, firms etc)
- A microsimulation model is a set of rules operating on a representative sample of micro units
- Many possible types of issue and micro-unit:
 - traffic flows, water supply, dental health ...
 - Here, the focus on income and households (persons)
- Several types of model: “static”, “dynamic”, “behavioural”
 - Here the focus is on “static tax-benefit models”
 - But these can incorporate elements of dynamic modelling and can be linked to behavioural models
- The main aim is to analyze the impact of policy changes on the distribution of target variables, rather than
 - on the mean, as happens using regression techniques
 - on individual cases, as happens using OECD-style standard family type calculations



Tax-benefit microsimulation models

- Tax-benefit models deal with income, re-calculating income components (taxes and benefits) for households from micro-datasets under different assumptions
 - Policy change
 - Exogenous economic change (e.g. earnings growth; unemployment)
 - Household characteristics
- Typically: income taxes, social contributions and cash benefits
 - + sometimes indirect taxes, non-cash incomes
- Main indicators/outputs
 - Risk-of-poverty and income inequality
 - Budgetary cost of changes
 - Gainers and losers from policy changes
 - Work incentives
- “Budget constraints”
- EUROMOD is a special tax-benefit model



What is special about EUROMOD?

- Many countries in a common framework
- Highly flexible and transparent
 - Comparability
 - Easy to simulate major reforms to policy structures
 - Short cut to model building (non-EU)
- Core EUROMOD: effects of policy changes on income (+ effects of other changes on impact of policy)
 - First round budgetary, distributional and incentive effects
 - Cross country comparisons, EU-level analysis, “policy swaps”
- Up to the model user to (e.g.)
 - Link to labour supply or macro models
 - Extend policy scope (subject to data availability)
 - Facilitates user-designed extensions and linkages (“talks” to Stata)
 - Provides the “engine” for simplified web-based models (Flemosi)



A little history and current state of play

- EUROMOD was built because of difficulties in making national model calculations comparable: first constructed by an EU15-wide project; funded by various EC FP grants (1996-2008)
- Since 2009 supported by PROGRESS funding from DG-EMPL
 - Extension to EU-27 (+ Croatia)
 - Based on micro-data from EU Statistics on Income and Living Conditions (EU-SILC)
 - Regular programme of updating of policies and input data
 - “Roadtesting” the model
- Cooperation between a network of national experts in each country + core team of developers (researchers), led by U of Essex
- First EU-27 version was released in August 2012 based on 2008 data and policies 2007-2010
- Currently working on update: policies up to 2012; data 2010



EUROMOD and national tax-benefit models

- National models exist in many of the EU member states
- As well as its multi-country coverage EUROMOD has two big advantages in most cases:
 - Much *more* flexible than national models, making complex structural changes and “blue skies” reforms quick to simulate
 - Freely available for not-for-profit research and analysis; (input data is subject to access conditions). National models tend to be private to their owners/developers (with notable exceptions e.g. openfisca.fr)
- On the other hand
 - National models may be easier to use for simple parametrical changes in one country
 - National modellers may have access to more detailed data than the EU-SILC
 - EUROMOD is the national model in some countries;
 - Models have been built for non-EU countries using the EUROMOD framework (South Africa, Serbia, Russia, ...)



EUROMOD: ways it can be used (I)

- Effects of policy changes (actual, proposed, illustrative)
- New policy ideas at national or EU level
 - Implications of common measures (e.g. an EU-wide minimum income)
 - Design of reforms with common objectives (e.g. a target reduction in a poverty indicator)
 - EU-level measures (between- as well as within- country effects)
- Consistent cross-country comparisons
 - Explicit comparisons
 - Policy swaps
- Economic changes and the effectiveness of existing policies
 - Automatic stabilising (aggregate) effects
 - Income stabilisation (micro/distributional) effects



EUROMOD: ways it can be used (II)

- Scenarios for employment, income growth, household composition and policy reform: implications for the income distribution (and the AROPE target group)
- “Nowcasting” and understanding the drivers of short-term change
- Forecasting (e.g. to 2020) based on scenarios (or official forecasts) for employment, demographics and household composition, income growth and indexation of taxes and benefits.
- And, with linkage to other models and/or data many other things.



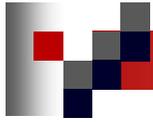
The EUROMOD community

- Model developers (researchers)
- National teams (universities, policy institutes, government depts.)
- Academic researchers and other hands-on researchers
- Policy users/stakeholders
 - Government/non-government
 - National/EU level; international
- Data providers (Eurostat and NSIs)
- Non-EU users of the EUROMOD software



Vision for EUROMOD's future

- More users and more uses
- Narrowing the gap between academic research and policymaking
- Strengthening the links within the community
 - A common analytical tool for “policy learning”
 - accessible across stakeholders in Europe 2020
 - comparable across Member States
 - Encouraging academic engagement with the analytical challenges posed by the current economic/social situation and new policy agendas
 - Improving data and communication about data requirements
 - Establishing an appropriate governance and support structures for the long term



Thank you!

<http://www.iser.essex.ac.uk/research/euromod>

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