

Creating a European microsimulation to assess the effects of socio-economic policies on health and health inequalities : challenges, solutions and limitations.

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→ Impact of different policies

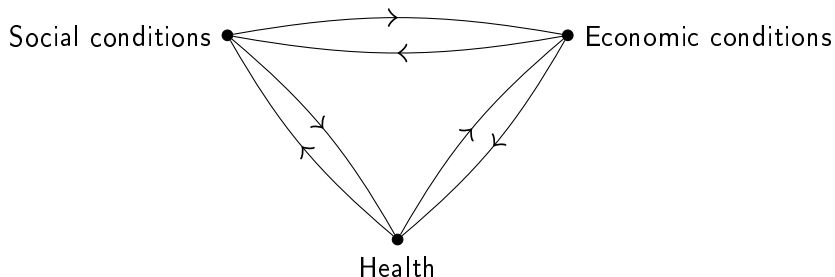
Research question

Analyse the possibility to create a European microsimulation to assess the effects of socio-economic policies on health and health inequalities.

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Philippe Liégeois (2021), *Combination of EUROMOD and LIAM2 Tools for the Development of Dynamic Microsimulation Models : Feasibility, Example and Conditions for Sustainability of the Linkage*, WP8, Task 8, D8.9, Leuven, InGRID-2 project 730998 – H2020

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- Virtual Belgium in Health:
Morgane Dumont (2021), *Microsimulation in time and space: applications and challenges*, PhD thesis
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- for the European Union
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Instruments simulated: income taxes, social contributions (paid by the employees, self-employed and employers), family benefits, housing benefits, social assistance and other income-related benefits.

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Weaknesses:

- Static
- Changes in policies, without adapting the input variables
- Accessibility to input microdata
- Not really adapted to be called from other codes

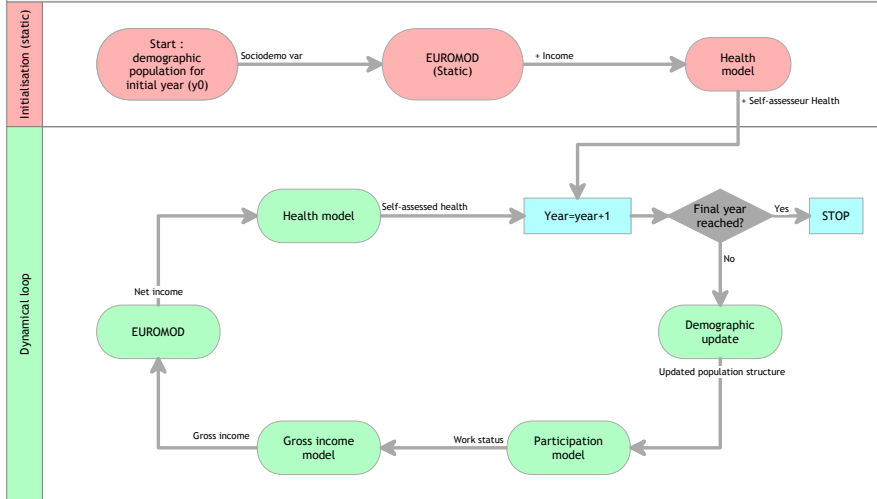
- LIAM2 (esp. MIDAS_LU)
- Dynamic in Static (Nowcasting)
- Expanded initial input population (from sample)
- Discrete time (image per periode)
- Modules : Ageing, Migrations, Education/Unemployment/Working/Retirement statuses, Gross income, Gross pension rights, Reporting (including yearly exhaustive populations as inputs for the static side)

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- → the output of EUROMOD not in the dynamic
- → Health absent

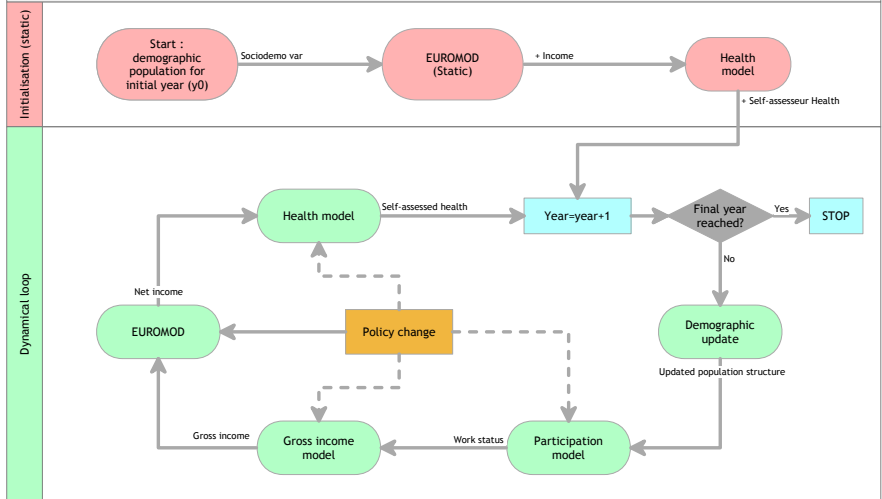
Our proposition: discrete time dynamic microsimulation with EUROMOD as module.

- Static in Dyn
- Discrete time
- Starting from a complete synthetic population (\gg sample)
- including all interactions with dynamical loop
- Possible addition of variables not available in EUROMOD
- Each module could use different hypothetical policies

Algorithm chart



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- 5 EUROMOD : used output = net income
- 6 Health model: self assessed health depending on: Age, gender, household, work status and disposable income

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Limitations:

- Stability? Combining many different modules
- First call of EUROMOD needed, change in the taxes policy?
- "Garbage in, garbage out"

- Methodologically and technically challenging
- Details count
- Need of several models/modules
- Very flexible (code in R)
- Helpful for decision makers
- ! Versions of EUROMOD
- To be continued...



Nizamul Islam and Marc Suhrcke

Thank you for your attention.
Questions?