

# LABsim

An integrated static-dynamic framework for life course analysis

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## Challenges to the welfare state and the realisation of socio-economic rights

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Microsimulation not as a crystal ball, but as a tool to analyse where current trends are cumulatively driving to —if unchecked— and the role of policies

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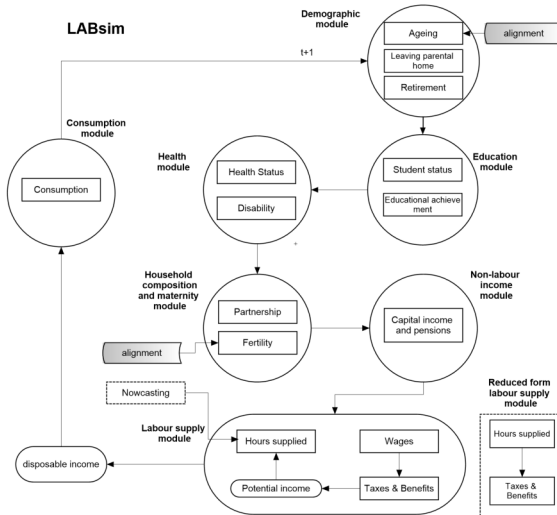
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### Key variables:

- |                      |                       |
|----------------------|-----------------------|
| • age                | • hours of work       |
| • gender             | • labour income       |
| • region             | • benefit income      |
| • education          | • pension income      |
| • health status      | • capital income      |
| • family composition | • taxes               |
| • employment status  | • consumption/savings |

# LABsim modelling framework



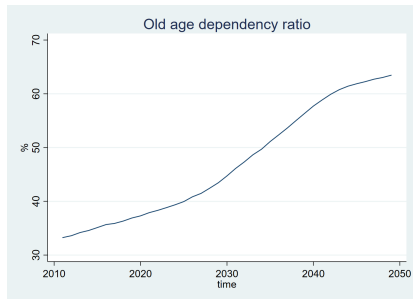
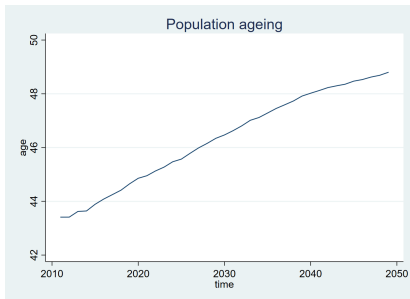
Application: Italy

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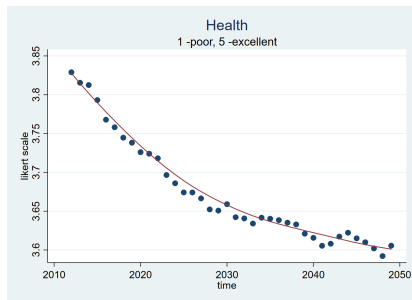
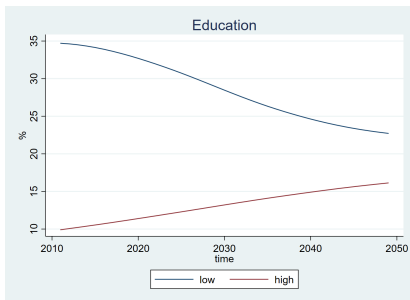
**Data:**

- Estimation sample: IT-SILC 2005-2017
- Initial population: IT-SILC 2011-2017
- Tax-benefit data: EUROMOD 2017, different policy years

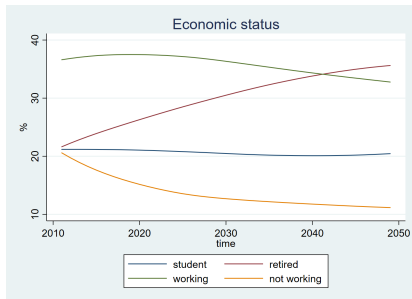
## Population ageing



## Education & health

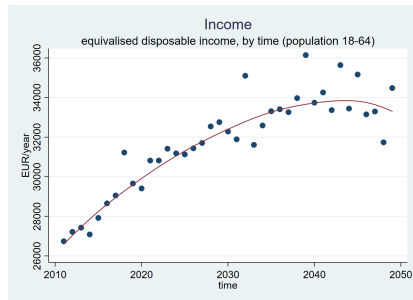
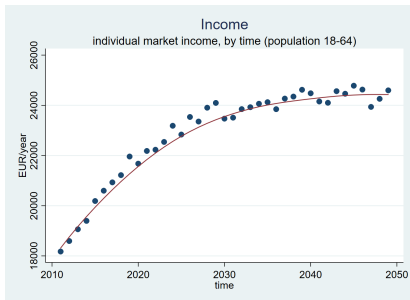


## Employment status



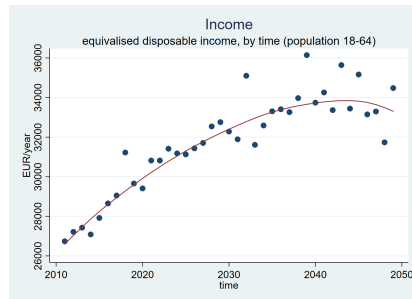
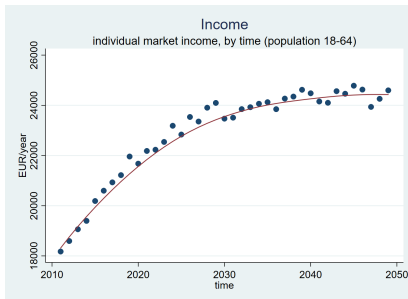
# Income

time trends



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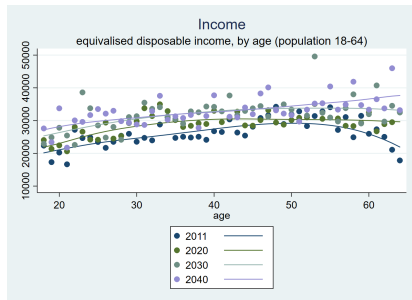
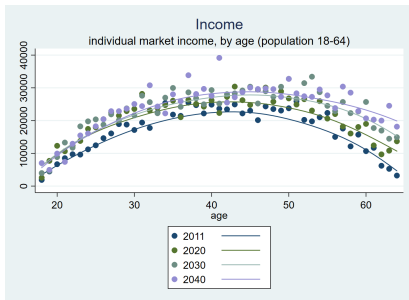


|             |           |                 |                  |
|-------------|-----------|-----------------|------------------|
| Inequality: | mk income | cross-sectional | longitudinal (*) |
|             | eq income | 0.51            | 0.44             |
|             |           | 0.41            | 0.35             |

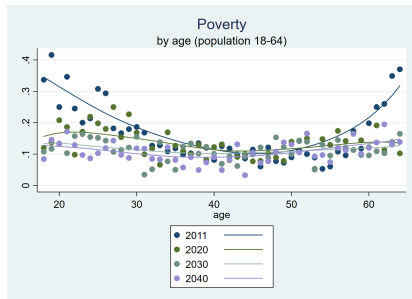
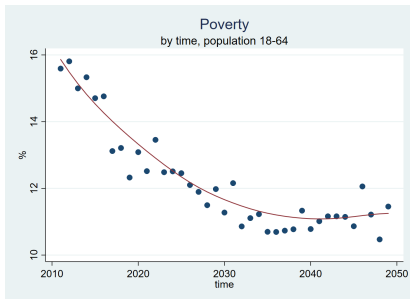
(\*) discount rate = 5%

# Income

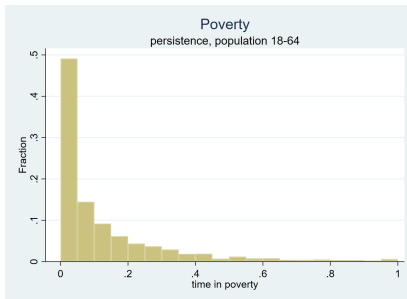
age-time profiles



# Poverty

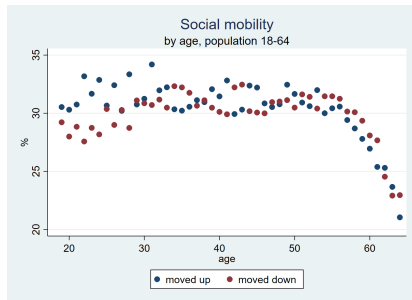
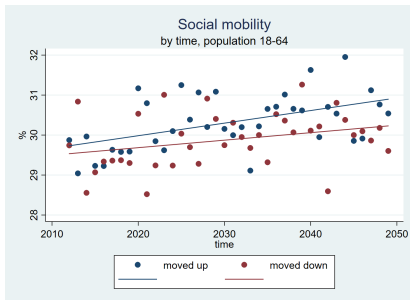


## Time in poverty



# Social mobility

between quintiles of equalised income



## Economic security

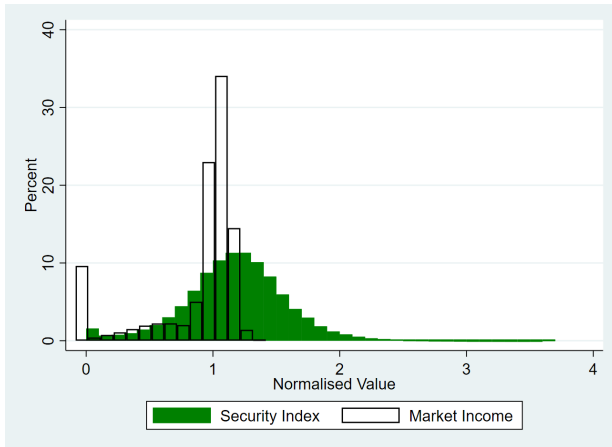
Economic security as a *normative evaluation* of the expected stream of resources available to any individual over the course of his or her residual lifetime, appropriately discounted for family composition and time:

$$S_i = \frac{\int_t \int_z W(z) \delta^t f_{i,t}(z) p_{i,t} dz dt}{\int_t \delta^t p_{i,t} dt}$$

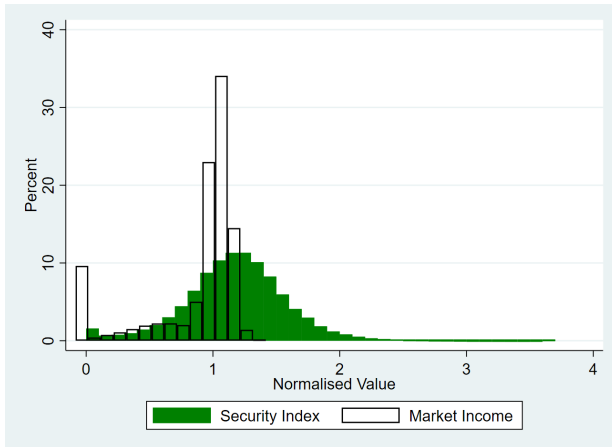
where

- $W(z)$  is the welfare associated to the resources available to individual  $i$  at time  $t$ , with  $W' > 0$  and  $W'' < 0$ ,
- $\delta$  is the discount factor,
- $f_{i,t}(z)$  is the density at which resources are available, and
- $p_{i,t}$  is the probability of being alive.

## Economic security - overall



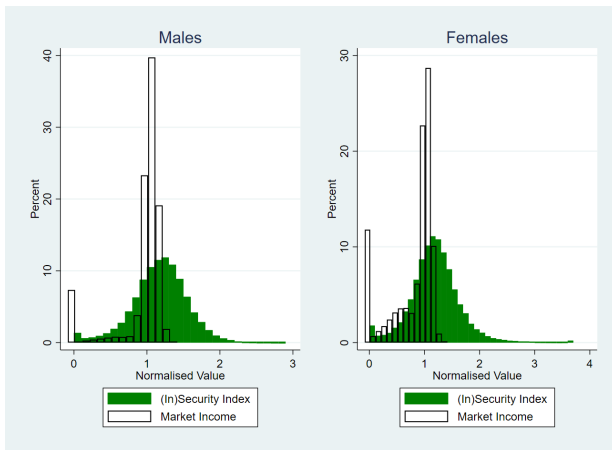
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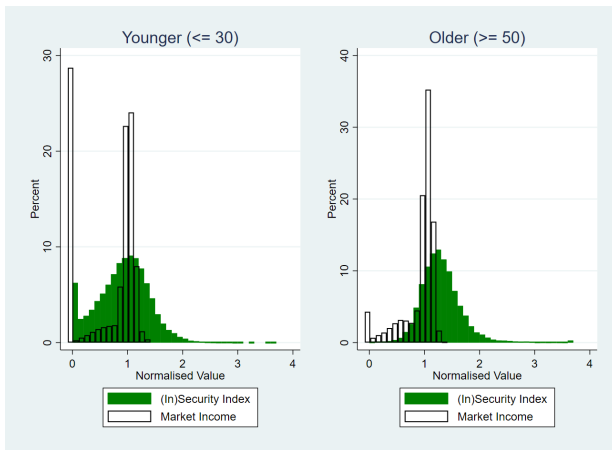
### 3 smoothing effects:

- ① time average
- ② resources pooling within the hh
- ③ convex welfare function

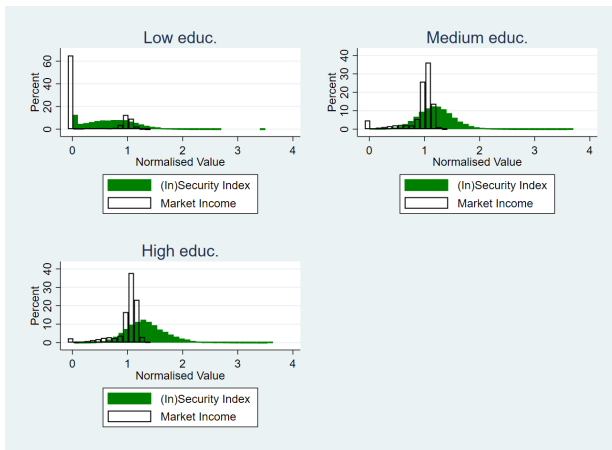
## Economic security - by gender



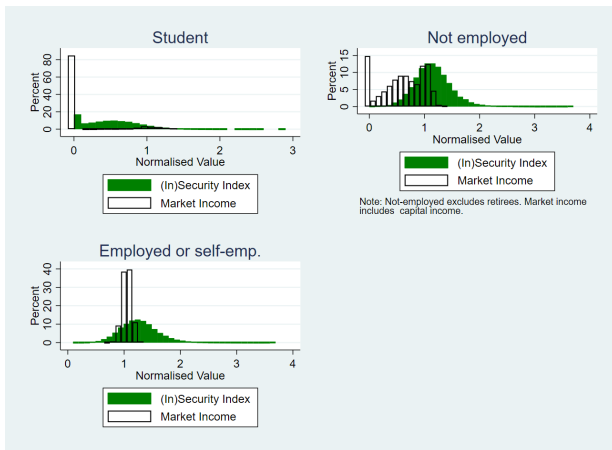
## Economic security - by age



## Economic security - by education



## Economic security - by activity



## Conclusions

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