



**Improving the incorporation of wealth data in
policy modelling. Converting the Eurosystem
Household Finance and Consumption Survey for
microsimulation purposes**

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The paper

- Explore prospects for using **Eurosystem Household Finance and Consumption Survey (HFCS)** dataset as a database for EU-wide **tax-benefit microsimulation model, EUROMOD**
- Many **new empirical research possibilities**:
 - analyse joint distribution of disposable income and net wealth
→ net incomes simulated with EUROMOD
 - integrated assessment of direct taxes on income/wealth
 - analyse policies which encourage asset accumulation (e.g. tax deductions for mortgage interest repayment or for contributions to private pensions funds)

HFCS

- **New dataset** covering detailed household wealth, gross income and consumption information
 - Joint effort of NCBs of euro-area and ECB, plus 3 NSIs
 - Probabilistic sample design which includes individuals living in private households, excl. non-residents
- Two important features:
 - **oversampling** of the wealthy (excl. IT and FI)
 - **multiple imputation** for missing items (excl. IT and FI)
but quality of imputations for individual countries hard to evaluate (different number of covariates; variables used not documented)

Selection of countries

Country	Wealth	Income	Fieldwork
Belgium	Time of interview	2009	04/10 – 10/10
Finland	31/12/2009	2009	01/10 – 05/10
France	Time of interview	2009	10/09 – 02/10
Germany	Time of interview	2009	09/10 – 07/11
Italy	31/12/2010	2010	01/11 – 08/11
Spain	Time of interview	2007	11/08 – 07/09

- Good representation of different tax-benefit systems and types of existing wealth taxation
- Well-developed housing markets: good cases for analysis of housing wealth, major component of most households' wealth
- Sample sizes among the highest in HFCS
- Quality and reliability of HFCS data

EUROMOD

- **Simulates cash benefit entitlements and direct tax and social insurance contribution liabilities** on the basis of tax-benefit rules and information available in underlying datasets for EU countries
 - Currently EU-SILC data, but built in a flexible way applicable to different databases
- Two approaches to include wealth in database:
 1. database created from HFCS, by adapting existing do-files
 2. statistical matching of HFCS with current EUROMOD dataset based on EU-SILC

Option 1 chosen in order to maintain strengths of HFCS
(oversampling of the wealthy & multiple imputation)

HFCS adjustment to EUROMOD

- **Sample adjustment** – children born after end of income reference period dropped
- **Adjustments of variables** – household-level variables attributed to individuals (equal sharing rule); estimation of social benefits (detailed in EU-SILC, aggregated in HFCS)
- **Missing information** – region of residence: regional specific policies cannot be accurately simulated; cadastral values for simulation of property taxes
- **Validation by comparison with EU-SILC-based results** – mean and median incomes broadly similar (but large differences at top of income distribution)

Comparison of disposable income

	Belgium			Finland			France		
	EM-HFCS	EM-SILC	Ratio (%)	EM-HFCS	EM-SILC	Ratio (%)	EM-HFCS	EM-SILC	Ratio (%)
Median	18,847	19,067	98.8%	20,566	20,755	99.1%	16,358	19,731	82.9%
Mean	21,636	20,177	107.2%	22,541	22,701	99.3%	18,449	23,032	80.1%
Gini	0.32	0.23	139.1%	0.25	0.24	104.2%	0.34	0.30	113.3%
	Germany			Italy			Spain		
	EM-HFCS	EM-SILC	Ratio (%)	EM-HFCS	EM-SILC	Ratio (%)	EM-HFCS	EM-SILC	Ratio (%)
Median	17,940	18,081	99.2%	13,235	14,899	88.8%	12,543	12,980	96.6%
Mean	21,724	20,528	105.8%	15,269	16,906	90.3%	15,347	14,340	107.0%
Gini	0.30	0.27	111.1%	0.33	0.33	100.0%	0.36	0.29	124.1%

Added value from HFCS

- **Expansion of policy domains currently covered in EUROMOD to wealth-related policies**
 - Taxation of wealth and income from wealth, tax incentives for asset accumulation, asset means-testing in determining eligibility for social benefits, etc.
 - Example: tax credit for mortgage repayment in France

The tax credit is generally 20%, but increases to 40% in the first year of the mortgage. While this was originally granted randomly to all households with a head younger or equal to 45 years, in the EM-HFCS we have information on the year of mortgage to verify this requirement.

Existing and simulated wealth-related policies

Tax/policy	Belgium		Finland		France		Germany		Italy		Spain	
	Ex.	EM	Ex.	EM	Ex.	EM	Ex.	EM	Ex.	EM	Ex.	EM
Inheritance tax/provision	Y	A	Y	N	Y	A	Y	A	Y	N	Y	A
Gift tax/provision	Y	A	Y	N	Y	A	Y	A	Y	N	Y	A
Real estate tax/provision	Y	R	Y	A	Y	A	Y	A	Y	S/R	Y	A
Real estate transfer tax/provision	Y	A	Y	N	Y	A	Y	A	Y	A	Y	A
General net wealth tax/provision	N		N		Y	A	N		N		Y	A
Specific net wealth tax	Y	A	N		N		N		Y	A	N	
Taxation of income from financial assets	Y	R	Y	R	Y	R	Y	S	Y	S	Y	R
Taxation of rental income	Y	R	Y	S	Y	R	Y	S	Y	S	Y	R
Tax deduction for mortgage repayment	Y	R	Y	S	Y	R	Y	R	Y	S	Y	R
Tax deduction for private pension funds	Y	R	Y	S	Y	S	Y	N	Y	S	Y	R
Wealth test for social benefits	Y	S	Y	R	N		Y	R	(N)		Y	R(N)

S: already simulated A: simulation added R: simulation refined N: not simulated

Validation of results of wealth tax policies

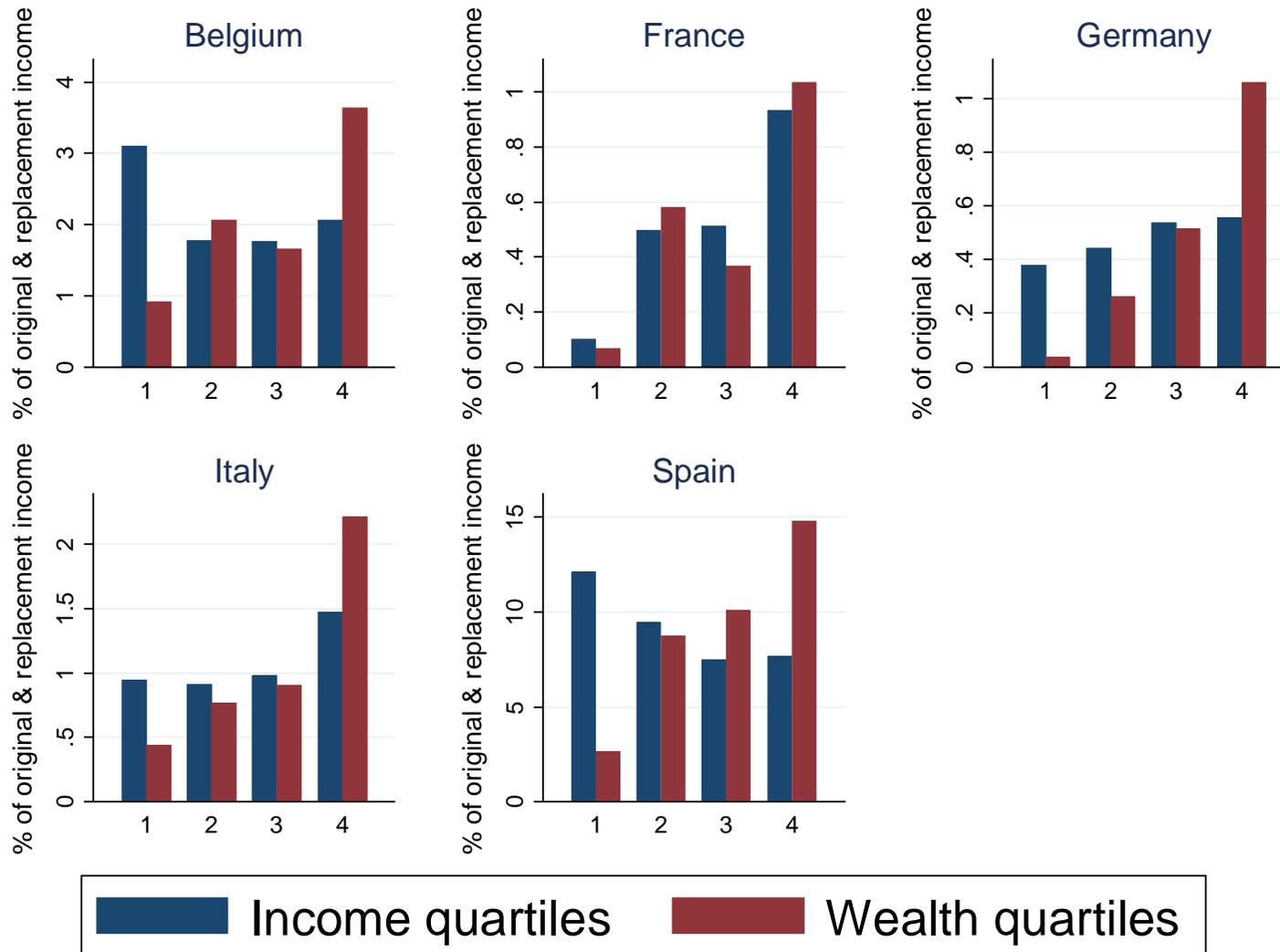
Country	Policy	EM-HFCS	Control	Ratio (%)
Belgium	Real estate tax	1,709	2,981	57.3%
	Real estate transfer tax	1,708	2,820.1	60.6%
	Registration duties on mortgage creation	198.1	74.4	266.2%
	Inheritance tax	1,359	1,779.9	76.4%
	Gift tax	127.5	269.9	47.2%
	Tax on long-term saving	134.6	184.9	72.8%
Finland	Real estate tax		462	
France	Real estate tax		13,647	
	Real estate transfer tax	6,300	7,188	87.6%
	Inheritance & gift tax	5,303	7,357	72.1%
	Net wealth tax	5,883	3,580	164.3%
Germany	Real estate tax	6,282	4,374	143.6%
	Real estate transfer tax	3,728	4,857	76.8%
	Inheritance & gift tax	1,356	4,550	29.8%
Italy	Real estate tax	5,751	9,663	59.5%
Spain	Real estate tax		7,274	
	Real estate transfer tax	6,268	17,399	36.0%
	Inheritance & gift tax	3,242	2,905	111.6%
	Net wealth tax	3,858	2,059	187.3%

- In general, given all assumptions and relatively low sample sizes, simulation outcomes are relatively satisfactory

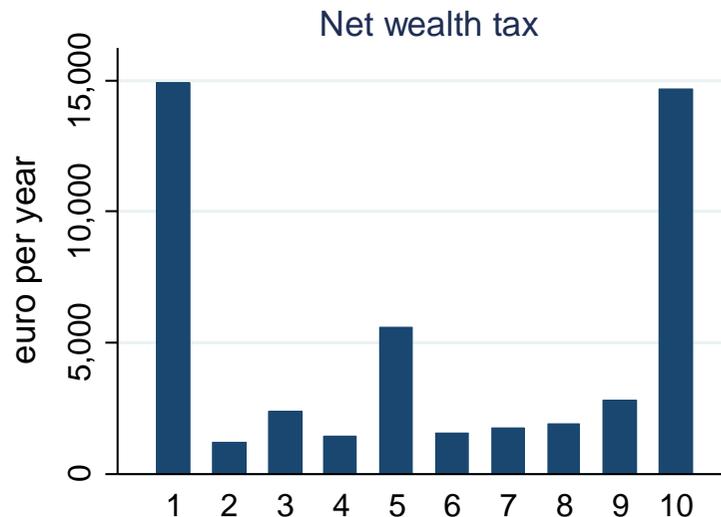
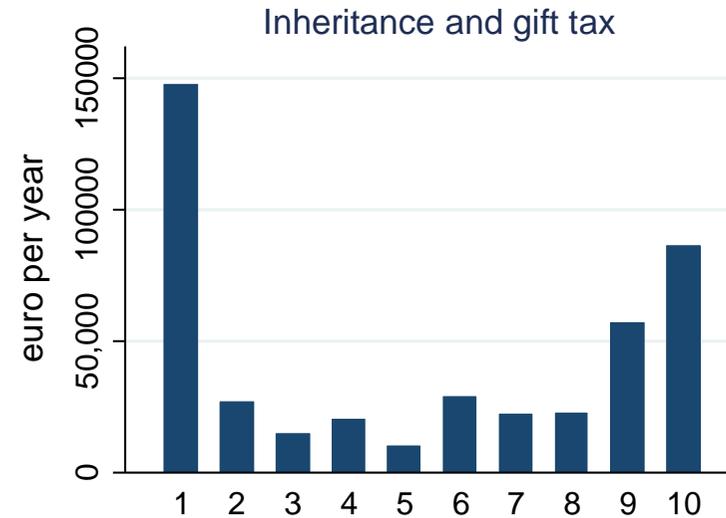
Gini index of disposable income before and after the inclusion of wealth related taxes

Country	Disposable income	Disposable income minus wealth related taxes
Belgium	0.3403	0.3555
France	0.2806	0.2840
Germany	0.2929	0.2929
Italy	0.3242	0.3218
Spain	0.3567	0.3784

Wealth related taxes as % of original and replacement income



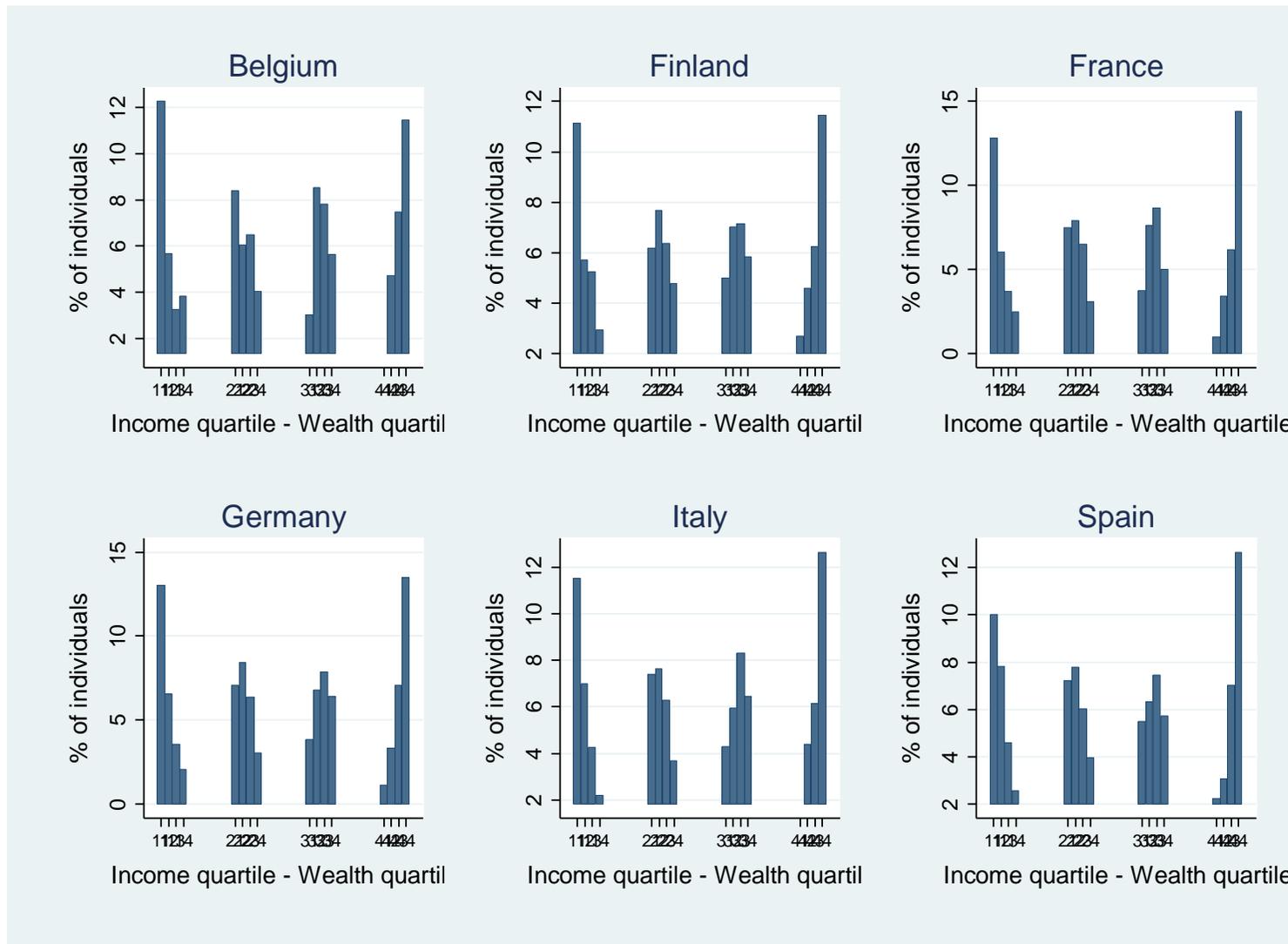
Wealth related taxes, by income deciles - France



Only households with positive amount of taxes paid included

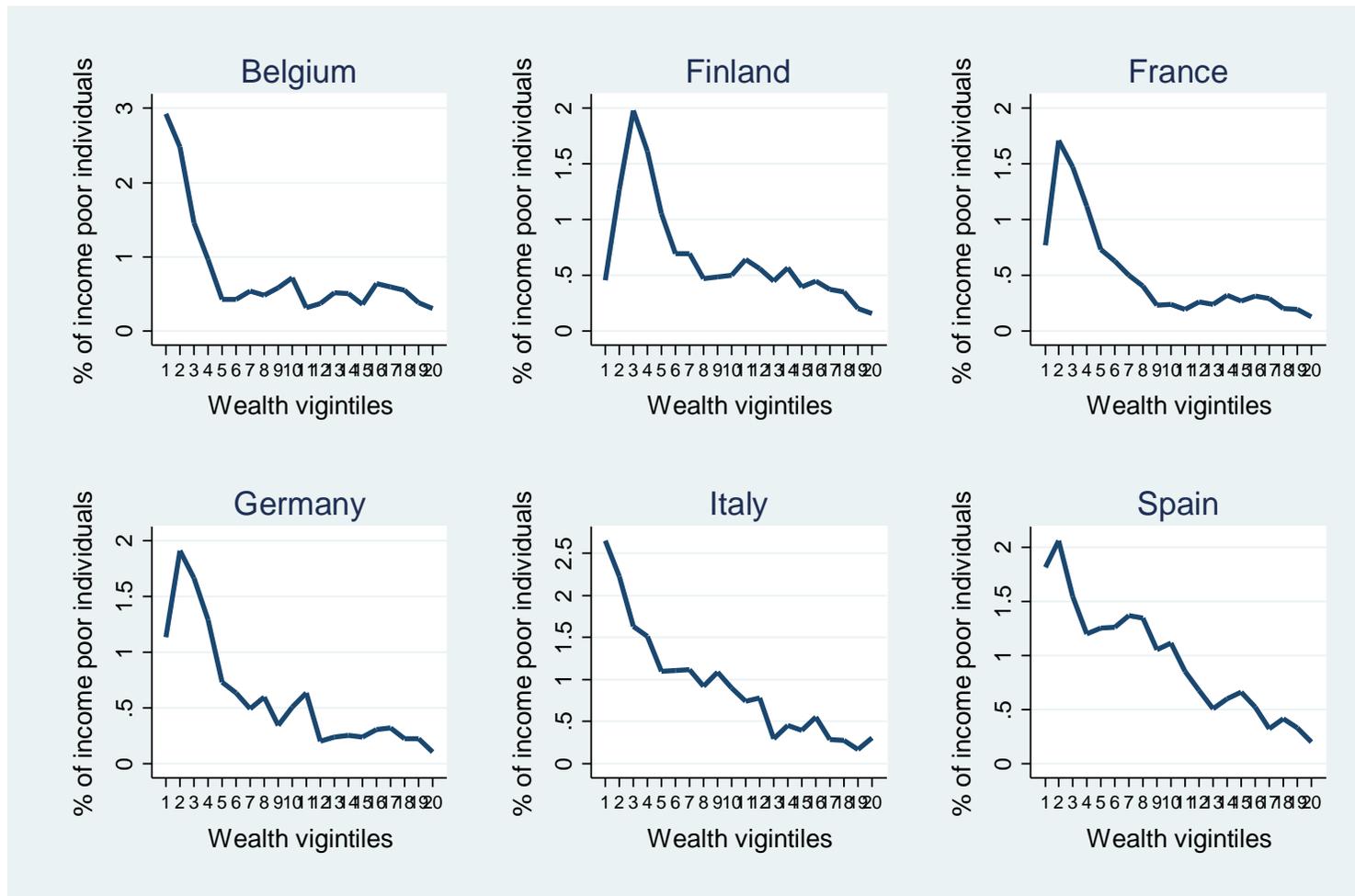
Unweighted observations: Real estate transfer tax: 366, Inheritance and gift tax: 104, Net wealth tax: 1,699;

Joint distribution of net income and net wealth



- Considerable reranking of individuals
- Positive correlation: 0.22 in BE, 0.23 in SP, 0.38 in GE, 0.48 in IT, 0.55 in FR 0.63 in FI

Income poor across wealth distribution



- Share of poor people highest in bottom of wealth distribution, but positive also higher up
- FI, FR, GE: highest income poverty risk not at bottom of wealth distribution, “confirming the potential temporary volatility of income”

Conclusions

- **Research tool** to enhance the empirical analysis at the micro level of wealth taxes

*By expanding EUROMOD with the policy domains currently simulated in EUROMOD with dimensions like wealth taxation and asset building incentives, it is now also **possible to investigate distributive, work incentive and budgetary consequences of taxes levied on real estate, net wealth, inheritances and gifts, etc.***

*Furthermore, policies which encourage asset accumulation, such as tax deductions for mortgage interest repayment or for contributions made to private pension funds, can also be analysed. Not only will it be possible to study existing policies, but we are also able to estimate the **impact of (potential) reforms, also in interaction with other tax-benefit policies.***

Comments

- Very intriguing paper, exploring new grounds for the evaluation of policies
- It puts a lot of pressure on data producers to provide quality, adequate coverage and variables needed for simulations
- Three questions, concerned with the policy “usability” of results:
 - 1. Many assumptions are needed for simulations. Is it enough to provide a single estimate? Should we not provide a range of estimates based on different assumptions?**
 - 2. When can we say that “given all assumptions, simulation outcomes are relatively satisfactory”?**
 - 3. How can we deal with strikingly different results?**

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Thank you for your attention!