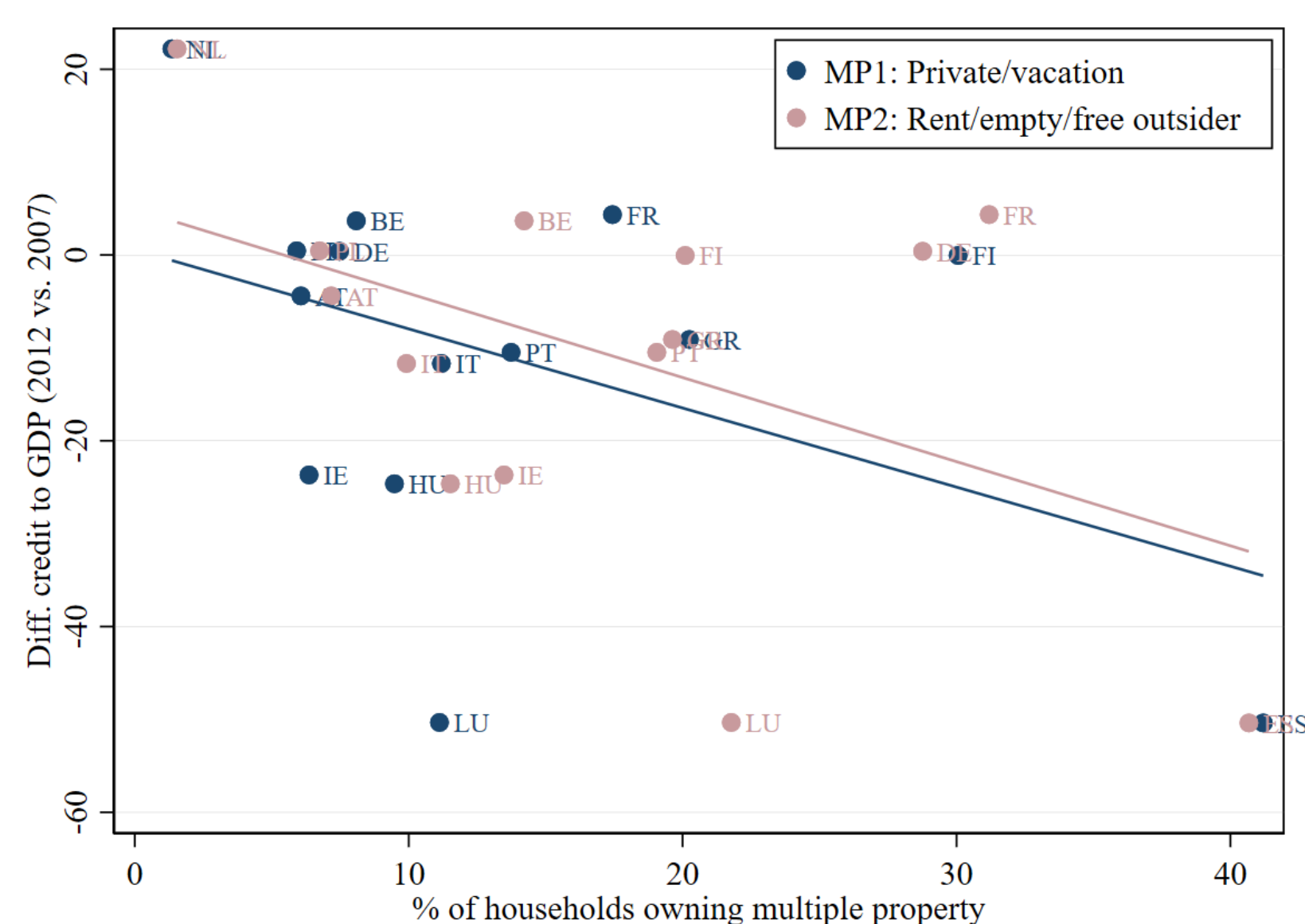


# Multiple property ownership: the role of household characteristics and macroprudential policy

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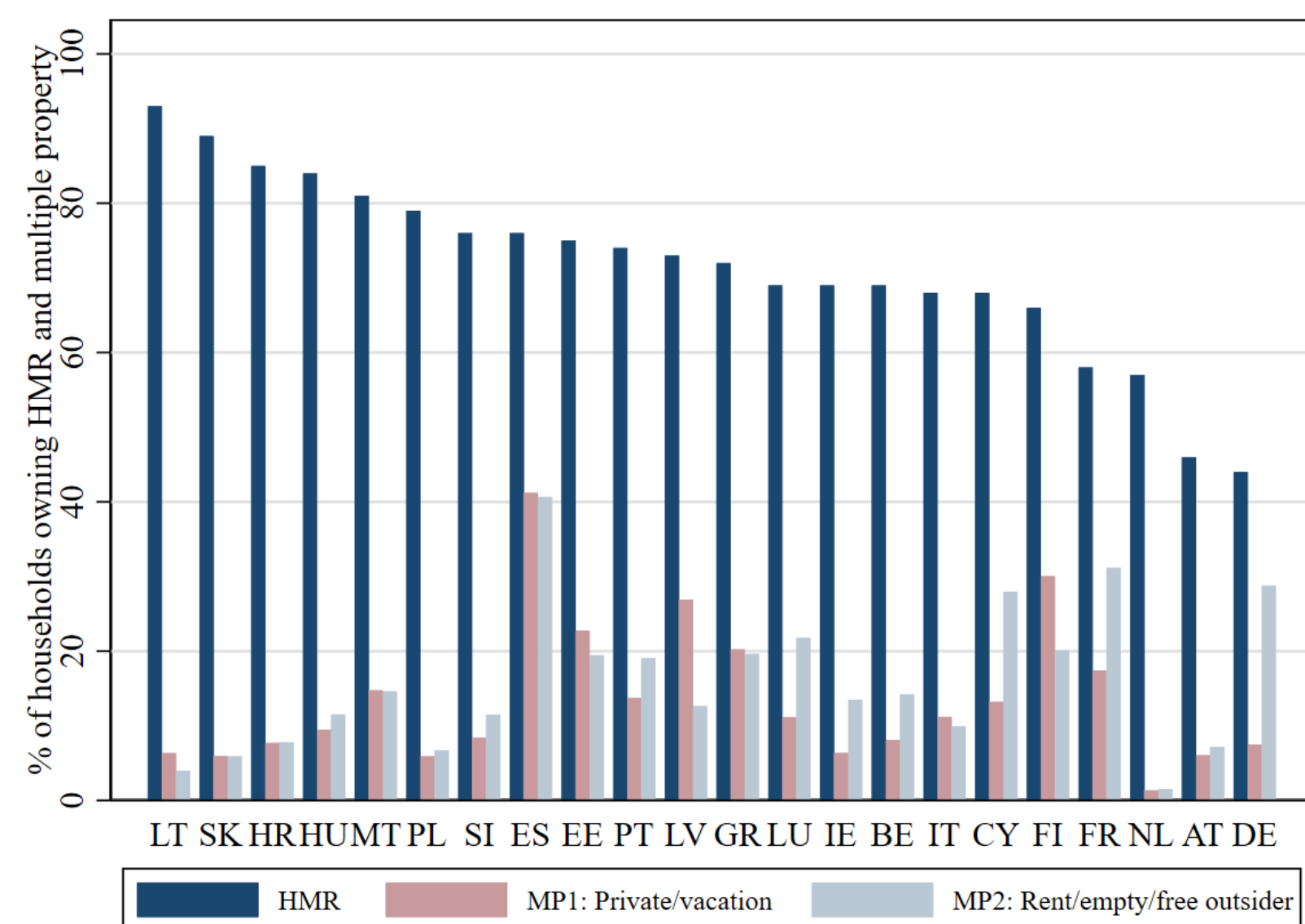
## Motivation & contribution

- Excessive housing demand and speculation contribute to increasing housing prices and economic expansion (Gao et al., 2020, *RFS*), and partake in periods of housing boom and bust cycle (Chinco and Mayer, 2016, *RFS*; de Fusco et al., 2022, *JFE*)
- Garcia (2022, *REE*) links second-home buying to over-construction, mispricing in housing market, and the consequent rise in foreclosures during the subsequent recession
- Macroprudential policy has been effective in limiting house price inflation and dampening housing credit growth, albeit to a varying degree depending on a tool employed (Popoyan, 2020, *REI*)
- Borrower-based measures (BBM) are expected to be more effective in leaning against price or credit growth (Hartmann, 2015, *JMCB*)
- We complement the literature by focusing on multiple property ownership as it has been shown that speculation matters for financial boom-bust cycles



## Data

- We use the 2017 wave of Household Finance and Consumption Survey microdata from around 20 ESCB countries
- The data includes detailed information on HH characteristics, income, consumption, assets, debts, and importantly ownership of household main residence (HMR) and multiple property (MP)
- Dataset is expanded to control for macroeconomic determinants and structural country-level characteristics
- We distinguish two types of MP ownership: i) 'private/vacation' use (MP1), ii) "investment" use for 'rent/empty/free outsider' (MP2)
- BBM variables (LTV, DSTI): i) 1=tightening during three years before survey, ii) cumulative number of periods of tightening



## Empirical strategy

- We estimate the relationship between different forms of MP ownership and BBM's tightening by the IV-probit regression (1=reported MP):

$$Pr(MP_{ij} = 1|X) = \Phi(\alpha + \gamma IMR_{ij} + \psi BBM_j + \beta X_{ij} + \lambda Z_j + \delta_t + \varepsilon_{ij})$$

- $X_{ij}$  includes control variables: household structure, education, job status, gender, age, income (deciles), wealth (deciles);  $Z_j$  includes macroeconomic determinants: inflation, real GDP, house price growth, employment rate, dummies (Soviet block, EA member, South Europe);  $\delta_t$  represents survey year dummies
- Inverse Mills' ratio  $IMR_{ij}$  constructed from selection equation in fashion of Malmendier and Wellsjo (2023, *J Finance*) which models the probability of HMR ownership
- Instrument by Gadatsch et al. (2018, *Econ Lett*) that assesses the compliance of national authorities with the recommendation of the ESRB that the central bank should play a leading role in macroprudential policy

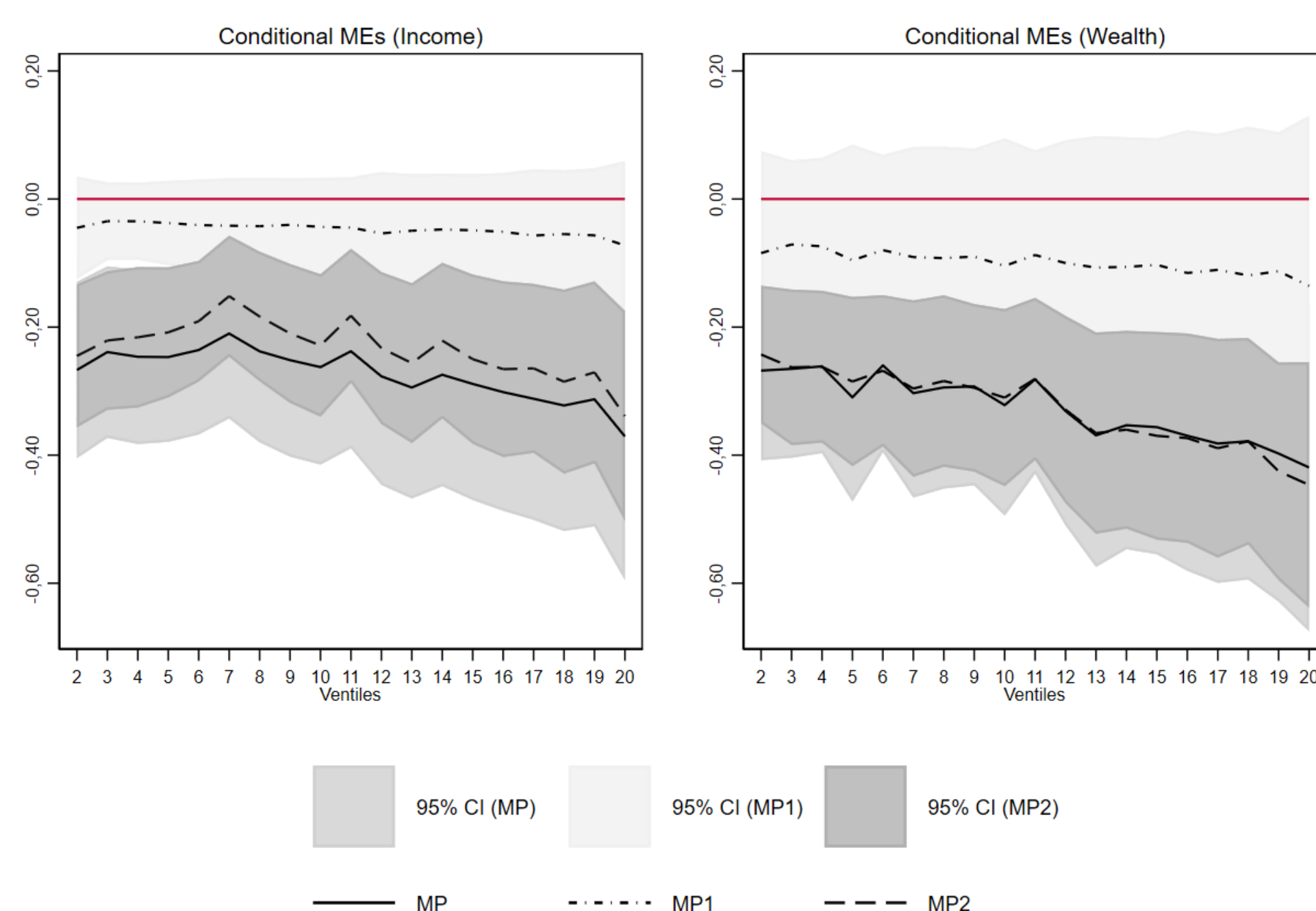
## Results I: baseline estimates

- Strong effect of BBMs' tightening on the propensity to own MP, especially for 'rent/empty/free outsider' purpose; baseline results confirmed by sub-samples analysis and IV-probit estimates

	(1)	(2)	(3)	(4)	(5)
<b>Panel B: Multiple property ownership – private / vacation</b>					
LTV tightening (1=yes)	-0.005 (0.08)	-0.057 (0.08)	-0.060 (0.07)	-0.047 (0.03)	-0.046 (0.03)
<i>1st stage regression</i>					
Instrument		2.638*** (0.60)	2.660*** (0.60)	2.651*** (0.58)	2.715*** (0.52)
N	38,973	38,973	36,499	4,583	14,919
Pseudo R. sq		0.154	0.157	0.227	0.177
<b>Panel C: Multiple property ownership – rent / empty / free outsider</b>					
LTV tightening (1=yes)	-0.232*** (0.06)	-0.255*** (0.06)	-0.219*** (0.06)	-0.173*** (0.05)	-0.173*** (0.05)
<i>1st stage regression</i>					
Instrument		2.667*** (0.62)	2.685*** (0.62)	2.672*** (0.59)	2.743*** (0.53)
N	41,094	41,094	38,340	5,044	15,866
Pseudo R. sq		0.093	0.104	0.141	0.135
<b>Panel D: Subsamples</b>					
Year of HMR acquisition	anytime	anytime	<2014	<2009,2013>	<1995,2008>

## Results II: heterogeneity analysis

- Heterogeneity in LTV tightening across income and wealth distribution



**Disclaimer:** The views and results presented in this paper are those of the authors and do not necessarily represent the official opinion of the National Bank of Slovakia or the Eurosystem.