



EUROPEAN CENTRAL BANK

EUROSYSTEM

# Macprudential Tightening and Multiple Property Ownership: New Evidence from European Wealth Microdata

---

Second Czech National Bank Workshop on  
Financial Stability and Macprudential Policy  
Prague

11/12/2025

Radu Popa  
European Central Bank



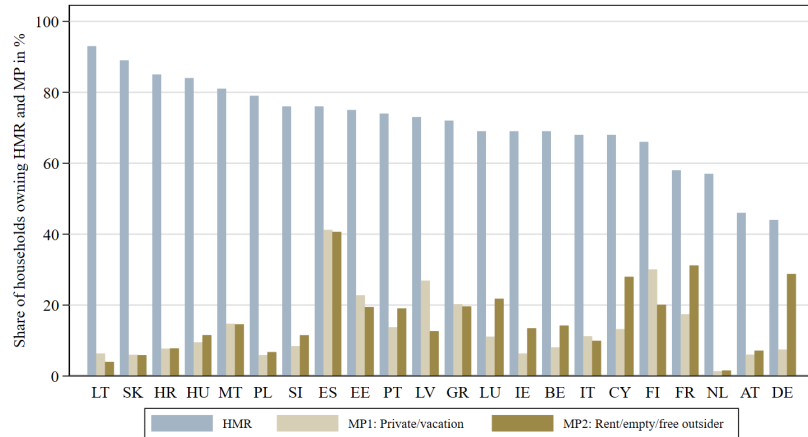
# Overview

- Use microdata from the Household Finance and Consumption Survey (HFCS) to assess the impact of Loan-to-Value (LTV) and Debt Service-to-Income (DSTI) limits **on propensity of households to hold multiple properties.**
- Differentiate by **number of properties held** and by **purpose of ownership** (vacation vs investment)
- Control for household characteristics (age, type of employment, income, wealth, education level) and use propensity score matching to control for selection bias.
- Robustness: use instrumental variable framework relying on independence of macroprudential authority (Gadatsch et al. 2018), alternative measure of macroprudential stance (Cerutti et al. 2017)
- Authors find that tightening of LTV reduces multiple home-ownership, with a stronger effect for homes owned for investment purposes

# 1) Controlling for date of acquisition and type of ownership

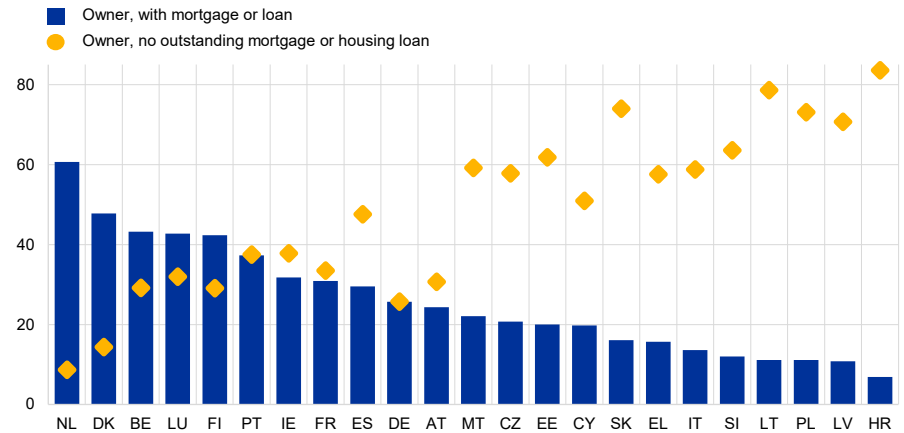
- It is important to differentiate from **owners without mortgages** (which are not affected by BBMs) and **owners with mortgages** (whose access to finance is limited by BBMs)
- HFCS allows to control for the year of acquisition of the main residence, not subsequent properties => difficult to disentangle effect of changes in BBMs on multiple home ownership

## Ownership of real estate across European countries



Note: HMR stands for household main residence and MP stands for multiple property. Descriptive statistics computed using household survey weights.  
Source: HFCS 2017, ECB (Klacso et al. (2025))

## Distribution of population by tenure status (2017)



Source: Eurostat

## 2) Controlling for strictness and types of measures

- Authors report 9 episodes of LTV tightening (EE, FI, HU, LV, LT, NL, PL, SK, SI)
- However, there are significant differences in the strictness of the LTV measures introduced (NL 103% vs SK 80%) and to what extent the measures are legally binding (PL and SI only recommendations)

### Periods of cumulative change in LTV and DSTI

Country	Survey beginning	2018		2017				2016				2015				2014				2013		
		q2	q1	q4	q3	q2	q1	q4	q3	q2	q1	q4	q3	q2	q1	q4	q3	q2	q1	q4	q3	
Austria	2016q4	..	..	..	..	..	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Belgium	2017q1	..	..	..	..	..	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Croatia	2017q1	..	..	..	..	..	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyprus	2017q1	..	..	..	..	..	..	..	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Estonia	2017q1	..	..	..	..	..	..	..	2	2	2	2	2	2	2	2	2	0	0	0	0	0
Finland	2017q1	..	..	..	..	..	..	..	1	1	0	0	0	0	0	0	0	0	0	0	0	0
France	2018q3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Germany	2017q1	..	..	..	..	..	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greece	2018q1	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hungary	2017q4	..	..	..	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
Ireland	2018q2	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Italy	2017q1	..	..	..	..	..	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Latvia	2017q3	..	..	..	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lithuania	2017q4	..	..	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Luxembourg	2018q1	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malta	2017q1	..	..	..	..	..	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	2017q2	..	..	..	..	4	2	2	2	2	2	1	1	1	1	1	0	0	0	0	0	0
Poland	2016q3	..	..	..	..	..	..	4	4	3	3	3	3	3	2	2	2	2	1	1	0	0
Portugal	2017q2	..	..	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Slovakia	2017q1	..	..	..	..	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
Slovenia	2017q2	..	..	..	..	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spain	2017q4	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: iMaPP, IMF (Klaccso et al. (2025))

### Comparison of LTV limits countries which experienced a tightening during 2014-2017

	FI	HU	LT	LV	NL	PL	SI	SK
<b>FTB</b>	95%	90%	85%	90%	103% (2015) →	80%	80%	80%
<b>SSB</b>	90%	80%	70%		101% (2017)		70%	
All types of borrowers					Recommendation			
First-Time Buyer (FTB)					Recommendation			
Second and Subsequent Buyer (SSB)					Recommendation			

Source: ESRB

### 3) Regression design

- Baseline regression design to measure impact of BBMs on likelihood of owning multiple properties:

$$\Pr(MP_{ij} = 1 \mid X_{ij}) = \Phi(\alpha + \beta X_{ij} + \gamma IMR_{ij} + \psi BBM_j + \lambda_j + \delta_t + \epsilon_{ij})$$

- $MP_{ij}$  - dummy denoting ownership of multiple homes
- $X_{ij}$  - controls (age, income, wealth, education, type of employment, etc)
- $BBM_j$  - dummy tightening in the Loan-to-Value
- $IMR_{ij}$  - inverse Mills ratio
- $\lambda_j$  - country-group (regional) fixed effects
- $\delta_t$  - survey-year fixed effects
- **Proposal:** interact BBM tightening dummy to test asymmetric effect of macroprudential measures in regard to:
  - Country-group fixed-effects
  - Structural characteristics of housing market (level of household debt, affordability, etc)
  - Borrower characteristics (income / wealth decile)

**Thank you for your time!**