Housing Markets and the Heterogeneous Effects of Monetary Policy Across the Euro Area

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Summary

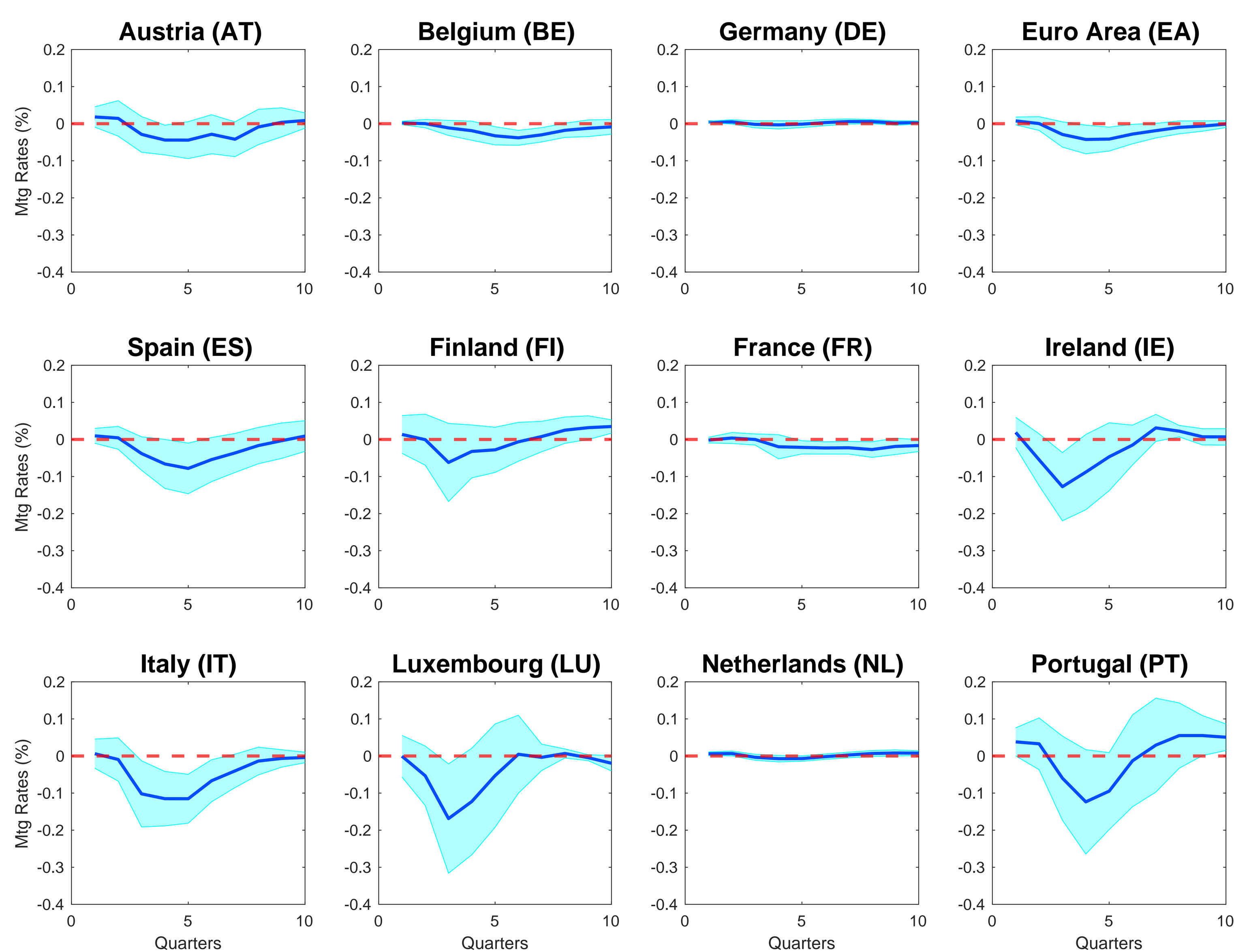
- Monetary policy in the euro area is much more effective in some countries (e.g. Spain, Ireland, Finland) than in others (e.g. Germany, France)
- Empirically, monetary policy is more potent in countries with higher adjustable-rate mortgage (ARM) shares and a higher homeownership rate (HoR)
- I incorporate these features in a currency-union New Keynesian model, and find that their interaction amplifies the effects of monetary policy on aggregate consumption
- **Policy implication #1**: A euro area-wide mortgage market requiring shared financial regulation decreases the heterogeneous effects of monetary policy
- **Policy implication #2**: Including house prices in the euro area price index stabilizes output at the cost of less stable goods inflation

Motivation

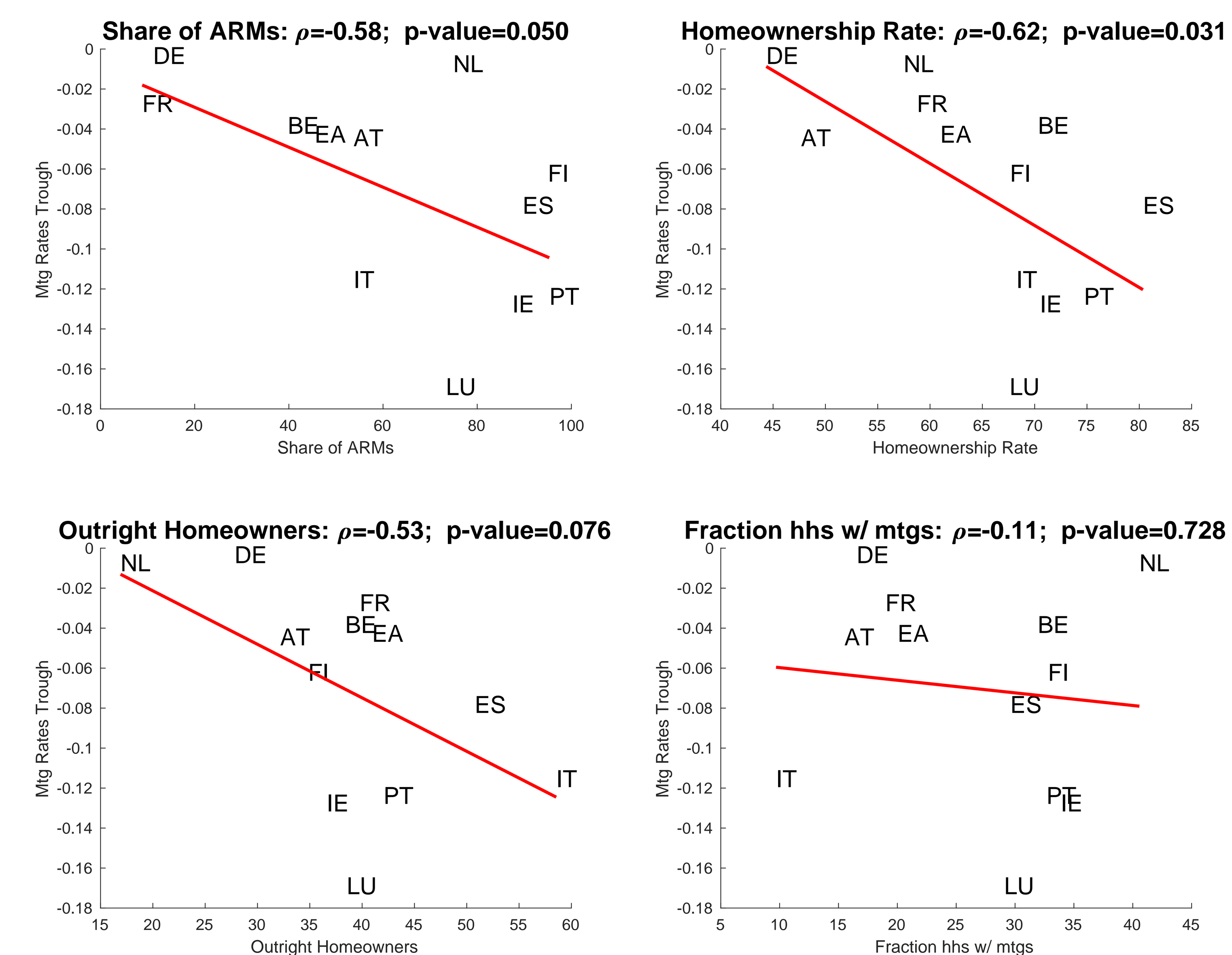
- Monetary policy has heterogeneous effects across euro area countries
  - For example, following a policy rate increase, aggregate consumption in Spain decreases more strongly than in Germany
- Policy implication: monetary authority cannot stabilize countries uniformly across the eurozone
- **Research questions**: What are the specific mechanisms behind the different responses across countries? What can be done to reduce the heterogeneous effects of monetary policy?
- **This paper**: Investigate role of key housing and mortgage market features: adjustable-rate mortgage (ARM) shares and homeownership rates (HoR)

Empirical Analysis

- Linear projections (Jordà 2005) to study the effects of monetary policy across 11 euro area countries (early adopters of the euro)
- Quarterly data spanning $2007Q1$–$2019Q3$
- Macrodata from the ECB Statistical Warehouse, Eurostat, and OECD. Microdata at the household-level from the Eurosystem Household Finance and Consumption Survey
- Identified monetary policy shocks: 2-year Overnight Interest Rate Swaps around policy announcements (Altavilla et al. 2019)
- Variables of interest: aggregate consumption, price-to-rent ratios, volume of newly issued mortgages, and average mortgage interest rates
- Correlate monetary policy effectiveness (peaks or troughs of impulse response functions) with ARM shares and HoR



Note: Empirical impulse response example: Heterogeneous pass-through to mortgage interest rates across the euro area



Note: Mortgage interest rate troughs correlate with ARM shares and HoR

Empirical Results

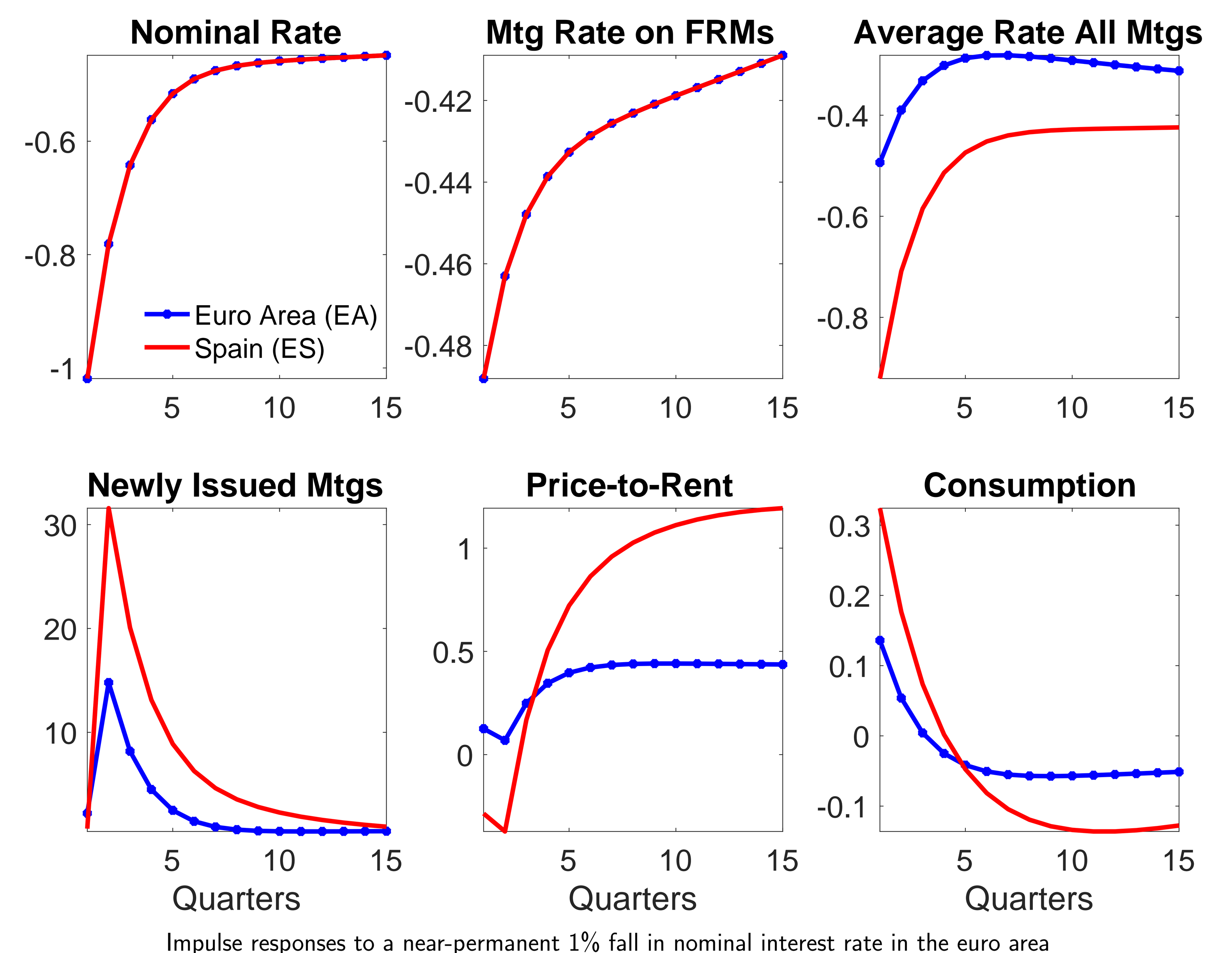
Countries with **stronger empirical responses** in aggregate consumption, price-to-rent, volume of newly issued mortgages, and mortgage interest rates are those with **higher ARM** shares and a **higher HoR**

Currency-union New Keynesian Model

- To quantify the relative importance of ARM share and HoR, I turn to a quantitative currency-union New Keynesian model with rich household balance sheets
- Home-Foreign structure (Faia and Monacelli 2008) where Home is small relative to Foreign. Home calibrated to Spain (ES) and Foreign calibrated to euro area (EA)
- Tractably embed rich housing and mortgage market characteristics (similar to Greenwald 2018). Households choose long-term mortgages and house size
- Each country has an exogenous mix of adjustable and fixed-rate mortgages
- Homeownership rate is endogenous because borrowers and landlords face within-period heterogeneous shocks in utility from owning (as in Greenwald and Guren 2022)
- **Novelty**: Can compare dynamic effects of changing mortgage market institutions (ARM and HoR) across countries on euro area monetary transmission mechanism

Model Solution and Results

- The pass-through from the policy rate to the mortgage interest rates is set optimally by the savers (households who supply the mortgages in the economy), and it depends on the ARM share
- Calibration: Match housing and mortgage market moments from the Household Finance and Consumption Survey (ARM shares, mortgaged and outright homeowner shares)
- Solution method: first-order perturbation around the steady state to obtain impulse responses to a near-permanent 1% fall in the nominal interest rate
- As in the data, Spain is much more responsive than the euro area in terms of average mortgage interest rate, volume of newly issued mortgages, price-to-rent, and aggregate consumption



Impulse responses to a near-permanent 1% fall in nominal interest rate in the euro area

ARM Shares and HoR Decomposition

- Spain has ↑ **ARM share** ⟹ Higher mortgage interest rate pass-through (**cash flow effect**)
- Spain has ↑ **HoR** ⟹ More mortgaged homeowners active in the market (**level effect**)
- Both channels at work **interact** to amplify the effects of monetary policy on aggregate consumption

Policy Implication #1: A Euro Area-Wide Mortgage Market

- In a unified mortgage market, financial regulation becomes more similar across countries and mortgage contracts are issued in a more similar proportion
- This setup is successful in reducing heterogeneity in monetary transmission because of a weakened pass-through from policy rate to mortgage interest rates
- However, during a monetary expansion, this comes at the cost of redistribution of resources towards the wealthier households and away from the poorer.

Policy Implication #2: Strategy Review (ECB 2021) and House Prices

- In the Strategy Review issued in July 2021, the ECB decided to include house prices in the euro area price index in the near future
- I redefine the price index in my model to include house prices, then include the relevant inflation objective in the Taylor rule
- The monetary authority stabilizes output at the cost of less stable goods inflation. This is because its range of action is now more limited, as it controls house prices in addition to good prices

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