Macroprudential policies and homeownership rates

Cross-country evidence

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Abstract

Macroprudential policies have become a key policy tool for financial regulators, but concerns persist that these policies may restrict homeownership. This paper examines the causal effect of macroprudential policies on homeownership rates using country-level panel data from 2007-2019 and a narrative approach to identification. I find little evidence that macroprudential policies reduce homeownership rates for up to five years after implementation. The null effects also apply to groups such as low-income households or mortgagors. The findings are consistent with an inelastic relative supply of owner-occupied housing, where credit shocks primarily affect prices rather than quantities. These results alleviate concerns that financial stability tools systematically exclude vulnerable households from ownership, but also indicate that relaxing such policies is unlikely to increase access to homeownership.

JEL Classification: R21, G28

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1 Introduction

The decline in homeownership rates has generated significant concern among policymakers and media commentators. A particular concern is the the potential role of macroprudential policies in limiting access to housing, as they restrict credit access. While macroprudential policies, such as loan-to-value constraints, appear successful in limiting credit growth and reducing house price growth (Arena *et al.*, 2020), they may inadvertently exclude first-time buyers and low-income households from homeownership opportunities. Consequently, there are calls in many countries to loosen such policies to promote homeownership. There is, however, limited evidence on the effect of macroprudential policies on homeownership rates. In this article, I ask whether macroprudential policies reduce homeownership rates in aggregate or for select groups.

Using country-level panel data from 2007 to 2019 and a narrative approach to identifying macroprudential policy shocks, I find little evidence that macroprudential policies reduce homeownership rates either at the time of implementation or up to five years after. The null results are precisely estimated and hold across multiple specifications, including aggregate homeownership rates and rates for specific demographic groups such as low-income households. The findings are robust across different policy instruments, such as borrower-based measures like loan-to-value and debt-service-to-income ratios that directly target household credit access. In addition, the results are robust to using different indices of macroprudential policies.

The null effect of macroprudential policies on homeownership can be explained by an inelastic relative supply of owner-occupied housing. I use a simple supply and demand framework, similar to Greenwald & Guren (2025), to discuss the results and interpret them in light of the previous literature on the effect of macroprudential policies on house prices. When macroprudential policies reduce credit availability, they shift demand for owner-occupied housing downward. The key insight is that whether this demand shock affects house prices or homeownership rates depends on the elasticity of the supply of owner-occupied properties relative to rental properties, not the aggregate housing supply curve. The results suggest that the relative supply of owner-occupied housing is inelastic, which is also consistent with the previous literature on the effect

of macroprudential policies on house prices.[1]

A potential criticism is that aggregate data hides important dynamics at the borrower level. I would argue, however, that understanding the effect of macroprudential policies on homeownership *requires* aggregate data. Homeownership rates are fundamentally an equilibrium object determined by supply and demand interactions in the housing market. Randomized controlled trials or micro-level studies cannot capture general equilibrium effects, and thus miss market-level responses such as price adjustments, supply responses, or rental market changes that determine aggregate ownership rates. Transaction volumes can also change without affecting the aggregate homeownership rate, as existing homeowners may choose to remain in their properties rather than transact. For the homeownership rate to decline, existing homeowners must actually exit the ownership market by selling to landlords or converting properties to rental units. This represents a different mechanism than changes in transaction activity. Nevertheless, there could be important dynamics at the local market level within countries, such as access to high-amenity areas, which I leave for future research.

In sum, the results suggest that macroprudential policies do not create systematic barriers to homeownership access. This is a key piece of evidence for policymakers evaluating the consequences of macroprudential policies and for academics seeking to discipline models where credit shocks affect housing markets (e.g. Greenwald & Guren, 2025; Castellanos *et al.*, 2024; Cima & Kopecky, 2024). The findings suggest that concerns about macroprudential policies creating unintended barriers to homeownership may be overstated, while also indicating that such policies may not be effective tools for increasing homeownership rates among disadvantaged groups.

The results also inform the debate about homeownership access for young and first-time buyers. Across developed countries, concerns about housing affordability have led to policy proposals aimed at helping certain households enter the housing market. Many involve relaxing macroprudential policies, such as lowering downpayment requirements. The findings suggest that such

[1] A large number of papers study the effect of macroprudential policies on house prices. For an overview of the literature, see Araujo *et al.* (2024).

demand-side policies may not effectively increase homeownership rates. Instead, the combination of these results with existing literature showing that macroprudential policies affect house prices suggests that demand-side interventions may primarily lead to wealth transfers to existing homeowners through higher house prices, rather than expanding homeownership access. This highlights the importance of considering supply-side factors when designing policies to address housing market access concerns.

2 Previous literature

This paper is related to several strands of literature. Regardless of the methodological approach, these studies almost exclusively focus on house prices and mortgage credit growth instead of homeownership rates. Indeed, Araujo *et al.* (2024) collects data from 58 empirical studies and 6,000 estimates on the effect of macroprudential policoies, but do not mention homeownership once.

Macro-level studies – A large number of studies have examined the impact of macroprudential policies on credit and house price growth (see Galati & Moessner, 2013, 2018; Araujo *et al.*, 2024, for an overview). Kuttner & Shim (2016) find significant negative effects of policy tightening on housing credit and house price growth. Lim *et al.* (2011) show that various macroprudential tools affect the cyclicality of private sector credit and leverage. Alam *et al.* (2019) demonstrate that tighter Loan-to-Value (LTV) constraints have non-linear effects on credit. Igan & Kang (2011) find that transactions and house prices drop significantly after debt-to-income (DTI) and LTV tightening. Other studies include Cerutti *et al.* (2017), Akinci & Olmstead-Rumsey (2018), and Poghosyan (2020). To my knowledge, none of these studies have linked macroprudential policies to homeownership rates.

Micro-level studies – Recent studies use micro-data to examine how macroprudential policies affect house prices or homeownership. Greenwald & Guren (2025) provide empirical evidence on how credit expansion affects the homeownership rate in the United States. Tzur-Ilan (2023) show that higher LTV limits resulted in borrowers choosing more affordable housing units.

Laufer & Tzur-Ilan (2021) find that higher risk-weights on high-LTV mortgages slow house price growth. Bäckman & Lutz (2020) find that interest-only mortgages had no impact on homeownership rates. Peydró *et al.* (2024) show that caps on high loan-to-income mortgages reduced credit supply and house price growth. The analysis is also related to studies on the causal effect of credit and interest rates on house prices (Glaeser *et al.*, 2012; Adelino *et al.*, 2025; Favara & Imbs, 2015; Loutskina & Strahan, 2015; Di Maggio & Kermani, 2017; Mian & Sufi, 2019), and provides inputs to theoretical macroeconomic models (e.g. Kaplan *et al.*, 2020; Garriga & Hedlund, 2020; Balke *et al.*, 2023).

3 Data and variables

The empirical analysis combines homeownership data from the European Union Statistics on Income and Living Conditions (EU-SILC), macroprudential policy actions from the Macroprudential Policies Evaluation Database (MaPPED) provided by the European Central Bank (Budnik & Kleibl, 2018), macroeconomic time series from Eurostat, and house price, interest rate and credit data from the Bank for International Settlements (BIS). All data is collected or collapsed to the annual level to match the frequency of homeownership data. Below I describe the homeownership and macroprudential data and the criteria used for selecting time periods and countries. The description of the macro-data is available in Appendix A.

3.1 Homeownership data

I collect homeownership data from the European Union Statistics on Income and Living Conditions (EU-SILC). Aggregate homeownership data is available for 35 countries, with the earliest series starting in 2003. In addition to aggregate homeownership rates, I collect data on the share of the population that own their property with or without a mortgage, and all categories for households above or below 60 percent of median equivalised income. I calculate changes in homeownership rates by taking the log first difference.

3.2 Macroprudential policies

I use the Macroprudential Policies Evaluation Database to construct a country-specific macroprudential policy index. The database contains 1,417 policy actions undertaken in 28 countries after 1995.[2] The database covers 11 policy instruments including capital buffers, lending standards restrictions, leverage ratios, and liquidity requirements. The last update was the fourth quarter of 2017, which marked the end of our sample period.

The MaPPED data has several advantages compared to other datasets (Fernández-Gallardo *et al.*, 2025). The data is based on surveys of national regulators, allowing comparison of policy actions across countries. The data contains information about each policy action, including announcement and implementation dates, and whether the policy involved tightening, loosening or ambiguous effects. Importantly for identification, the survey asks if the policy had a countercyclical motivation or design.

Following (Fernández-Gallardo *et al.*, 2025) and Fernandez-Gallardo (2023), I construct an overall index of macroprudential policies using all non-countercyclical policies. I use the announcement date to assign a value to each policy, using a positive value for tightening, a negative value for loosening and a zero for ambiguous actions.[3] Following (Meuleman & Vander Vennet, 2020), I account for differences in scope between new and existing policies by assigning different weights. The weighting scheme gives higher weight to activations and deactivations, compared to changes in scope or level. The weighting scheme is provided in Table A2.

For each country, I then construct a series as the weighted average of macroprudential policy actions active for a given year. The variable of interest is then the year-over-year change in the index, denoted $\Delta MaPP_{i,t}$.

[2]The database contains several policies enacted before 1995, if they are still in place in 1995. In total, the database contains 1,925 policies.

[3]The implementation date is also noted in the dataset. The median difference between announcement and implementation is 1 month, and the average difference is 4 months.

3.3 Sample selection and summary statistics

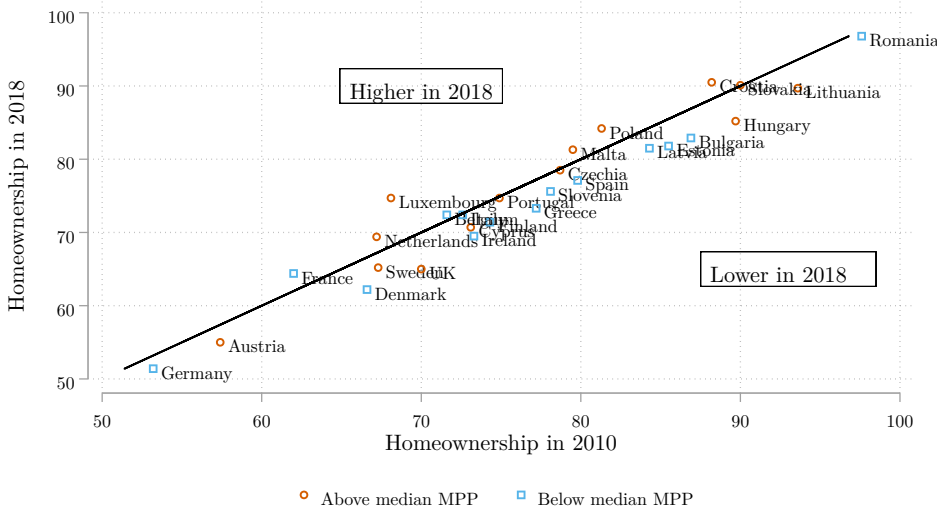
The sample selection is guided by data availability for homeownership rates and macroprudential policies. The final sample includes 28 countries. Homeownership data begins in 2003, but with many missing observations. The start and end dates for all countries with available homeownership data are listed in Table A3, along with homeownership rates in the first year, last year and on average for all years.

4 Stylized facts on homeownership and macroprudential policies

A striking feature of homeownership rates is their slow-moving nature and apparent insensitivity to major economic shocks. Figure 1 shows that the homeownership rate declined in many countries between 2010 and 2017. Appendix Figure 1 plots the full time-series for all countries. The average decline was 1.25 percentage points. The decline was larger, however, for countries that used *fewer* macroprudential policies. A naive regression of the change in macroprudential policies between 2010 and 2017 and the change in homeownership yields a positive but insignificant coefficient of 0.2.

Even during periods of significant economic turmoil, such as the European debt crisis of 2010-2012, homeownership rates show little response. This persistence suggests that homeownership decisions are driven by long-term factors rather than short-term economic conditions or policy changes. The gradual nature of the decline indicates that changes in homeownership rates reflect structural shifts in housing markets and demographic trends rather than cyclical fluctuations.

Another notable feature is the substantial variation in homeownership rates across countries. A striking fact is that the homeownership rate for Central European countries such as Romania, Lithuania, and Slovakia have such high rates today. Tenants in these countries were able to buy their properties at large discounts after the fall of the Soviet Union (Broulíková *et al.*, 2020). Some differences may reflect cultural preferences (Huber & Schmidt, 2022) or institutional



Note: Average: -1.25
Change for above median MPP:: -0.34
Change for below median MPP: -2.16

Figure 1: Change in homeownership rates 2010-2019 and the number of macroprudential policies

Notes: The figure shows the homeownership rate in 2010 on the x-axis and the homeownership rate in 2017 on the y-axis. The color of the points indicates if the country had an above median number of macroprudential policies since 2010. The solid line marks the 45 degree line, showing whether homeownership increased or decreased between 2010 and 2017.

factors such as rental market regulations (Kaas *et al.*, 2021). For the Eastern European countries to still have such high rates today is remarkable, and suggests that the homeownership rate is slow moving variable not overly affected by economic policies or economic development.

5 Empirical strategy

This section describes the empirical strategy designed to identify how changes in macroprudential policies affect the homeownership rate in aggregate and for different groups. The analysis follows the literature on macroprudential policies and homeownership rates (Fernández-Gallardo *et al.*, 2025; Fernandez-Gallardo, 2023; Kuttner & Shim, 2016; Cerutti *et al.*, 2017). I use a narrative approach to identify macroprudential policy shocks, and a local projection (LP) framework to estimate the effect of macroprudential policies on the homeownership rate.

5.1 Identifying macroprudential policy shocks

To identify the effect of macroprudential policies on the homeownership rate, it is necessary to measure only exogenous components of macroprudential policy. In this setting, that involves identifying policies that do systematically respond to changes in the homeownership rate or economic fluctuations that may drive changes in the homeownership rate. Overall, this is a challenge that arises because macroprudential policies are not introduced randomly, but instead often respond to the state of the economy. For example, macroprudential policies may be introduced in response to overheating of the economy. If policy tightening occurs at housing market peaks, the homeownership rate could decline for reasons unrelated to the policy.

To address this challenge, I use a narrative approach of Fernández-Gallardo *et al.* (2025) to identify macroprudential policy actions that do not have a counter-cyclical motive. The MaPPED database contains a variable about the motivation for introducing a specific policy action. I use this variable to identify policies that do not have a counter-cyclical motive. A measure has a countercyclical design when the instrument automatically tightens when systemic risk intensifies, and loosens when systemic risk decreases (Budnik & Kleibl, 2018). I remove all policy actions with this characteristic. The main variable of interest represents a shock to the aggregate macroprudential policy stance for each country.

A common approach in the literature is to include variables that could motivate the introduction of macroprudential policies, such as credit growth or house prices. The narrative approach addresses this by excluding counter-cyclical policies from the outset. However, macroprudential policies may still be correlated with the state of the economy. To address this concern, I include control variables for the change in credit to the private non-financial sector, the change in the house price index, and the change in the central bank policy rate.

5.2 Threats to identification

There are several other threats to identification, beyond the potentially endogenous implementation of macroprudential policies. I now discuss these in more detail.

Omitted variable bias. If macroprudential policy moves together with the macro and housing cycle, there may be an omitted variable bias. For instance, loose monetary policy could increase housing demand or change expectations over future house prices, which may influence both the homeownership rate and the introduction of macroprudential policies. To address this concern, I include a number of control variables.

Measurement error. Finally, measurement error in policy indicators may mean that I assign a high weight to a policy that has a limited impact or scope. To address this concern, note that the weighting scheme of the MaPPED database allows me to give a lower weight to policies that have a limited impact or scope. In robustness checks, I also use another macroprudential policy database, and run results using no weighting. In unreported results, I find no differences in results.

Anticipation effects. The MaPPED database contains information about both the announcement and implementation of macroprudential policies. If macroprudential policies are announced and implemented at different times, it may be the case that the implementation of a policy does not affect the homeownership rate, but the announcement does. To address this concern, I use the announcement date as the date of the policy. Overall, the difference between the announcement and implementation date is small, with an average (median) difference of 5 (1) months. Since I use annual data, the difference between the announcement and implementation date is unlikely to be a major concern.

Data frequency. Statistical power is potentially a concern with annual data. However, unlike financial variables such as credit growth or house prices, which can respond quickly to policy changes, homeownership rates reflect long-term household decisions about tenure choice that are typically made infrequently and with considerable deliberation. Even if macroprudential policies do affect the attractiveness of homeownership, these effects may take several years to materialize as households gradually adjust their housing tenure decisions. For this reason, using annual data is appropriate in this setting.

5.3 Empirical specification

I investigate the relationship between homeownership and macroprudential policies using local projections (LP) following Jordà (2005), Richter *et al.* (2019) and Coulier *et al.* (2022). I use this methodology as it enables us to estimate the effect of macroprudential policies over time, which is particularly relevant for examining a slow-moving variable such as homeownership rates. I estimate the following baseline model:

$$\Delta O^{j}_{i,t+h} = \alpha^{h}_{i} + \gamma^{h}_{t} + \beta_{h}\Delta MaPP_{i,t} + \sum_{k=0}^{2} \phi^{h}_{k}\Delta X_{i,t-k} + \epsilon_{i,t+h}, \tag{1}$$

for $h = 1, \ldots, 5$. The dependent variable is the change in the homeownership rate for country i and group j in year t. The variable of interest, $\Delta MaPP_{i,t}$, is the change in the number of cumulative index of macroprudential actions.

I examine several measure of homeownership. First, I use the aggregate homeownership rate. Then, I also examine effects for households with and without a mortgage. This distinction is particularly relevant for macroprudential policies that directly target mortgage lending. To examine potential distributional effects, I also analyze homeownership rates for different income groups. The data includes homeownership rates for households above and below 60 percent of median equivalised income. Macroprudential policies may disproportionately affect households that rely more heavily on credit to purchase housing, which could include lower-income households. All homeownership measures are expressed as percentages of total households, and I use log differences to capture percentage changes in homeownership rates over time.

I include a vector of controls in $X_{i,t}$. Control variables are all lagged one year, and include GDP growth rate per capita, inflation, the change in the house price index, the change in credit to non-financial firms, the change in the central bank interest rate, and the sum of macroprudential policies. α_i and α_t are country and time dummies that account for cross-country differences in the average homeownership growth rate and for general time trends in the homeownership growth rate, respectively. However, the results are generally not sensitive to the inclusion of these controls or to different lag lengths.

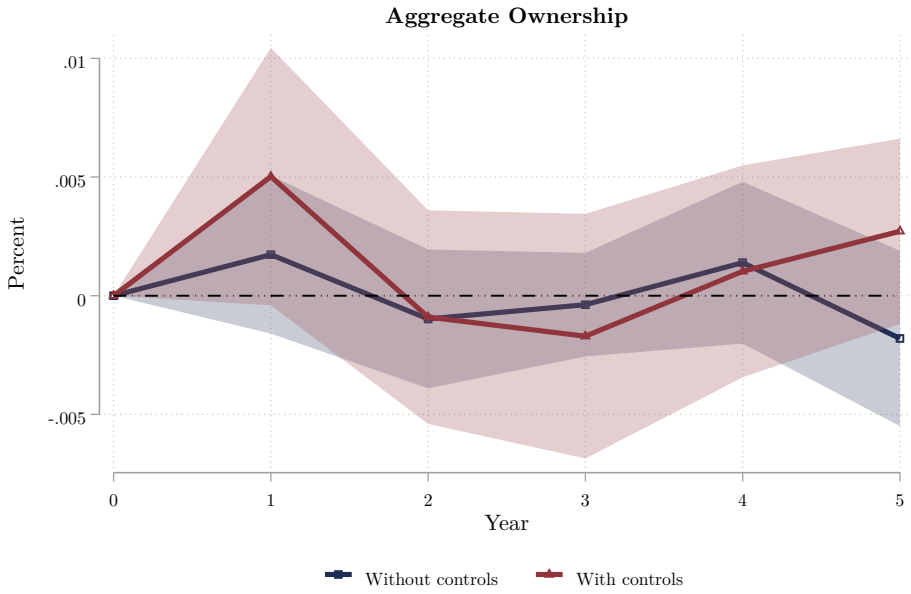


Figure 2: Linear projection of change in homeownership rates and macroprudential policies

Note: The figure shows the impulse response functions for borrower-based macroprudential policies over a five-year horizon, estimating using equation (1). The dependent variable is the change in the homeownership rate, and the independent variable is the change in the number of macroprudential policies. The red line represents the specification with control variables included, and the blue line represents the specification with control variables excluded. 95 percent confidence intervals are marked in shaded areas. Control variables are all lagged one year, and include GDP growth rate per capita, inflation, the change in the house price index, the change in credit to non-financial firms, the change in the central bank interest rate, and the sum of macroprudential policies.

6 Results

I estimate the effect of macroprudential policies on homeownership rates using local projections as specified in Equation (1). The results consistently show no statistically significant effects of macroprudential policy changes on homeownership rates across all specifications and time horizons. Figure 2 presents the impulse response functions for borrower-based macroprudential policies over a five-year horizon, with and without control variables. The results are also available in Table A4. The point estimates are close to zero and remain statistically insignificant throughout the entire horizon, with 95 percent confidence intervals that include zero at all time periods.

This null result on the aggregate homeownership rate stands in sharp contrast to the well-documented effects of macroprudential policies on other housing market variables. A large

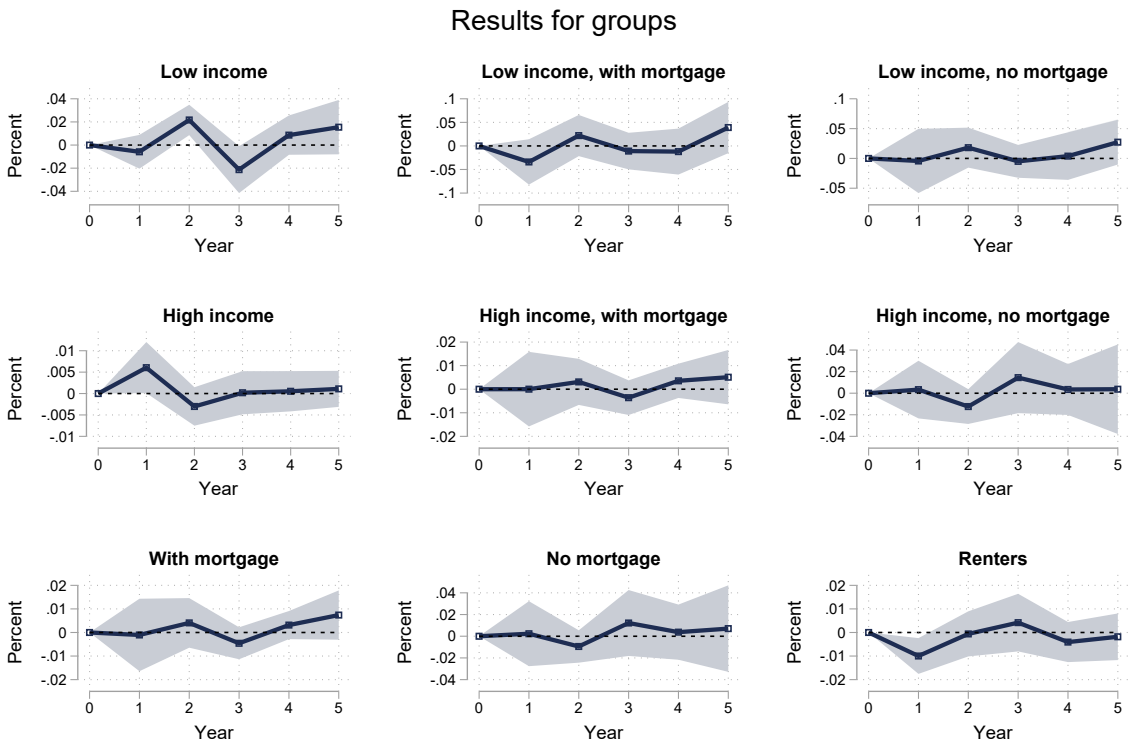


Figure 3: Linear projection of change in homeownership rates and macroprudential policies

Notes: The figure shows the impulse response functions for borrower-based macroprudential policies over a five-year horizon, estimating using equation (1). The dependent variable is the change in the homeownership rate for different groups, and the independent variable is the change in the number of macroprudential policies. The red line represents the specification with control variables included, and the blue line represents the specification with control variables excluded. Control variables are all lagged one year, and include GDP growth rate per capita, inflation, the change in the house price index, the change in credit to non-financial firms, the change in the central bank interest rate, and the sum of macroprudential policies. 95 percent confidence intervals are marked in shaded areas.

literature has established that macroprudential policies are effective in reducing credit growth and moderating house price appreciation (Cerutti *et al.*, 2017; Kuttner & Shim, 2016; Alam *et al.*, 2019). These policies appear to work precisely as intended in affecting the intensive margin of housing market activity—reducing the volume of credit and the pace of price increases. However, the extensive margin of housing market participation appears largely unaffected by these same policy interventions.

Next, I examine the effect of macroprudential policies on homeownership rates for different groups of households. A key concern for policymakers is that macroprudential policies may disproportionately affect certain groups of households, such as low-income households or house-

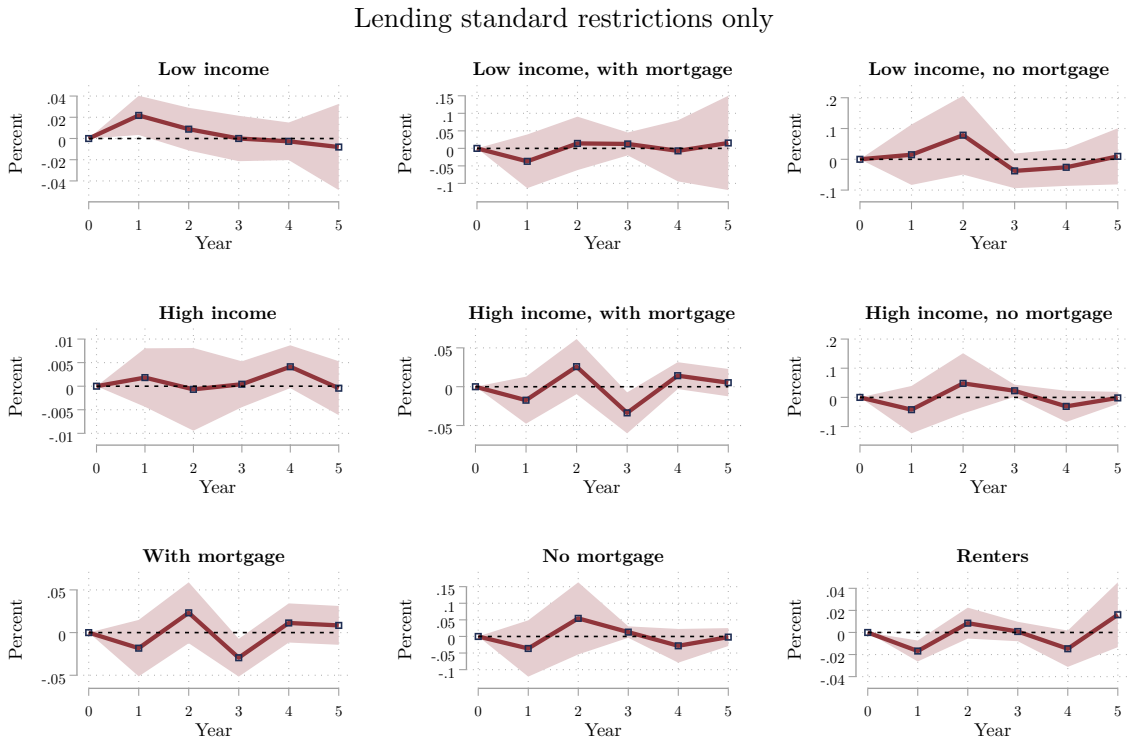


Figure 4: Linear projection of change in homeownership rates and lending standard restrictions

Notes: The figure shows the impulse response functions for borrower-based macroprudential policies over a five-year horizon, estimating using equation (1). The dependent variable is the change in the homeownership rate for different groups, and the independent variable is the change in the number of macroprudential policies. The red line represents the specification with control variables included, and the blue line represents the specification with control variables excluded. Control variables are all lagged one year, and include GDP growth rate per capita, inflation, the change in the house price index, the change in credit to non-financial firms, the change in the central bank interest rate, and the sum of macroprudential policies up until a given year. 95 percent confidence intervals are marked in shaded areas.

holds with a mortgage. Figure 3 shows the impulse response functions for different groups of households, including low-income and high-income households, as well as for households with and without mortgages. The results are also available in Table A5. The results are consistent with the main results, showing no statistically significant effects of macroprudential policies on homeownership rates for any group. The effect for high-income households is marginally significant, but the effect is small and is only present in year $t+1$. Consequently, there is little support for the concern that macroprudential policies may disproportionately affect certain groups of households on the aggregate level.

The next set of results focuses on lending standard restrictions. These restrictions, which include

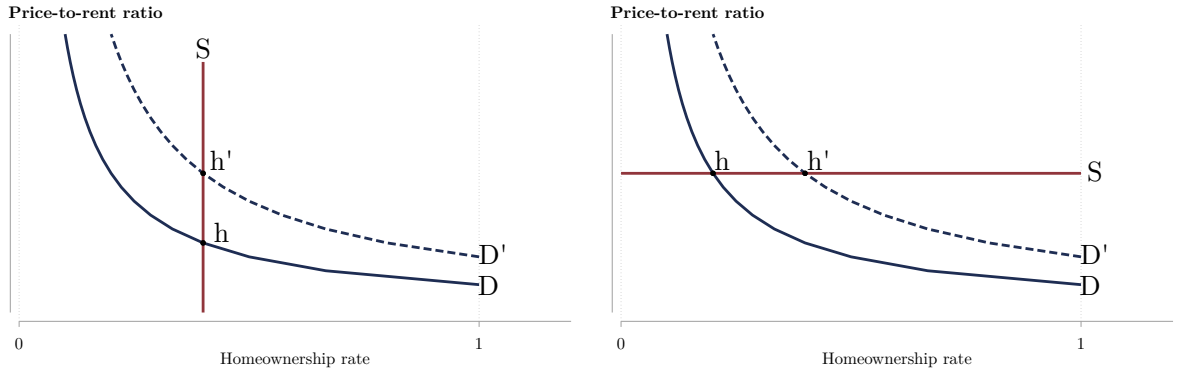
LTV and debt-service-to-income (DSTI) constraints, are a common tool for macroprudential policies. I therefore select only these policies, create an index of lending standard restrictions, and estimate the effect of this index on homeownership rates. The results in Figure 4 show that the effect of lending standard restrictions on homeownership rates is also small and statistically insignificant for most periods. For low-income households in the first row, the effect is actually positive. However, the effect is only present in year $t + 1$. It is therefore not the case that macroprudential policies affect homeownership rates through lending standard restrictions in the long-run. Conversely, the results also suggest that removing lending standards will not help the homeownership situation for low-income households or in aggregate. The results are also robust to examining other select policies.

Finally, Appendix Figure 3 show that the results are robust to using an alternative macroprudential policy database, the IMF's integrated Macroprudential Policy (iMaPP) Database, originally constructed by Alam *et al.* (2019).

7 Interpreting the results

The null effect of macroprudential policies on homeownership rates is potentially surprising, and raises the question of why macroprudential policies would not affect homeownership rates. In this section, I discuss how to interpret the null result on homeownership using a simple demand and supply framework. The framework closely follows the discussion in Greenwald & Guren (2025), who derive intuition from a simple supply and demand framework for how changes in credit affect the homeownership rate.

Demand for homeownership comes from households who chose either to rent or to own. The price for ownership is defined as the price-to-rent ratio and the quantity is the homeownership rate. Alternatively, we could define the cost for owning as the user-cost of owning. Since the user-cost is directly related to the price of housing, however, these two approaches would be equal. Both price-to-rent and the homeownership rate captures the trade-off between owning and renting. As the price-to-rent ratio increases more households prefer to rent than to own,



(a) Inelastic supply

(b) Elastic supply

Figure 5: Supply and demand for homeownership

Notes: The figure shows the supply and demand for homeownership. The price-to-rent ratio is on the x-axis and the homeownership rate is on the y-axis. The demand curve is downwards sloping, and the supply curve is either perfectly inelastic or perfectly elastic depending on the panel. The figure is based on the discussion in Greenwald & Guren (2025).

which creates a downwards sloping demand for ownership. Assuming that households require credit to own housing, an expansion of credit supply will shift the demand for housing out. The expansion of credit could be either because of more favorable financing terms (such as a change in the LTV ratio), because of lower interest rates, or because of a higher quantity of available credit.

The supply curve is not the general supply curve for housing, but the supply curve for owner-occupied housing relative to renting. Intuitively, the slope of the supply curve comes either from new construction of owner-occupied housing or from landlords or owners who decide to convert rental units to owner-occupied housing. The slope of the supply curve therefore represents a) the willingness of construction companies to expand the share of owner-occupied housing in their total construction when prices increase and b) the willingness of landlords to convert existing supply from rental to owner-occupied housing. In the case of new construction, a shift of the supply curve would be due to a higher fraction of newly constructed owner-occupied housing, not total housing construction. New construction in response to higher prices that holds the share of owner-occupied housing constant does not shift the supply curve in this setting.

The supply and demand framework is presented graphically in Figure 5. The figure plots the

price-to-rent ratio against the homeownership rate. Following the discussion above, the demand curve is downwards sloping. In Figure 5(a), the supply curve for owner-occupied housing is perfectly inelastic, which will be the case if landlords cannot convert units and if the share of construction devoted to owner-occupied housing does not respond to prices. This setting corresponds theoretical macroeconomics models such as Greenwald (2017) and Favilukis *et al.* (2017), where households cannot rent housing. Any demand shock will be fully reflected in prices, as illustrated by the move from point h to h' in the figure.

Figure 5(b) illustrates the opposite case, namely where supply is perfectly elastic. This corresponds to the setup in certain macro-models, e.g. Kaplan *et al.* (2020), where identical, risk-neutral and deep-pocketed landlords buy and sell housing. In this setup, the price for housing is set by the present value of future rents, at which landlords are willing to buy and sell an unlimited amount. Since credit does not affect the present value of future rents, the price for housing is not affected by credit. Instead, the homeownership rate will shift when the demand curve shifts, moving us from point point h to point h'.

This simple analysis shows the main intuition behind how macroprudential policies affect the homeownership rate. The slope of the supply function will determine the response of both the homeownership rate and house prices to a change in credit. Previous studies in this area have found that macroprudential policies affects both credit and house prices. This suggests that we are not in the world where the supply for owner-occupied housing is perfectly elastic: if supply were perfectly elastic, macroprudential policies could affect credit but not house prices.

This framework does not make predictions on the composition of ownership. Even if the aggregate homeownership rate is unchanged, specific groups could be affected. The empirical results suggest that the composition of ownership is not affected by macroprudential policies. One way to understand this is if housing markets are segmented, and if buyers in one segment compete against similar buyers. Greenwald & Guren (2025) find evidence for segmented markets in the US, and show that aggregate homeownership rates are affected by macroprudential policies. However, they do not examine the composition of ownership across groups.

The findings in the rest of the literature is also relevant here. The macroprudential literature suggest that macroprudential policies are effective in reducing credit growth and moderating house price appreciation (see Section **??**). These policies appear to affect the pace of price increases. However, the extensive margin of housing market participation appears largely unaffected by these same policy interventions. This is consistent with a model where the supply of owner-occupied housing is inelastic, and where macroprudential policies affect house prices but not quantities.

The user cost model of housing provides additional theoretical support for these findings. In this framework, the equilibrium condition equates the user cost of owning with the cost of renting. When macroprudential policies increase the cost of credit, they raise the user cost of owning, which should theoretically reduce the demand for owner-occupied housing. However, if house prices adjust more rapidly than the supply of owner-occupied housing, the market can reach a new equilibrium where the price-rent ratio adjusts to maintain the user cost equality. In this scenario, the homeownership rate remains unchanged because the relative cost of owning versus renting is preserved through price adjustments rather than quantity changes. This mechanism explains why macroprudential policies can affect house prices without necessarily altering the extensive margin of homeownership participation.

Finally, several recent papers have used micro-data to study the transition into homeownership (e.g., Eerola *et al.*, 2023; Van Bekkum *et al.*, 2019; Fischer *et al.*, 2024). However, these studies do not estimate the impact of macroprudential policies on the homeownership rate. Macroprudential policies may well cool down housing markets by reducing the number of transactions, while aggregate homeownership rates remain unaffected. Existing homeowners have the opportunity to remain in their properties instead of transacting, meaning that a reduction in transactions does not necessarily lead to a reduction in homeownership rates.

8 Conclusion

This paper examines whether macroprudential policies reduce homeownership rates, a question of significant policy relevance given widespread concerns about housing market access and financial stability. Using country-level panel data from 2007-2019 and employing local projection methods with a narrative approach to identification, I find no evidence that macroprudential policies reduce homeownership rates either at implementation or up to five years after. The null results are precisely estimated and hold across multiple specifications, including aggregate homeownership rates and rates for specific demographic groups such as low-income households. The null effects are consistent with an inelastic relative supply of owner-occupied housing, where credit shocks primarily affect prices rather than quantities.

The absence of effects on homeownership rates suggests that macroprudential policies may not create unintended barriers to homeownership access, addressing a key concern among policymakers. This finding provides reassurance that financial stability policies can be implemented without systematically excluding vulnerable groups from homeownership opportunities. Based on the previous literature, macroprudential policies instead affect house prices and credit, which may lead to a wealth transfer from existing homeowners.

The results have broader implications for the ongoing debate about housing market access and affordability. Many policy proposals aimed at helping young and first-time buyers involve relaxing macroprudential policies, such as lowering downpayment requirements or providing subsidized savings accounts. The findings from this paper suggest that such demand-side interventions may not effectively increase homeownership rates among target groups. Instead, the combination of these results with the existing literature showing that macroprudential policies affect house prices suggests that demand-side interventions may primarily lead to wealth transfers to existing homeowners through higher house prices, rather than expanding homeownership access.

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Online Appendixes

9 Online Appendix: Figures

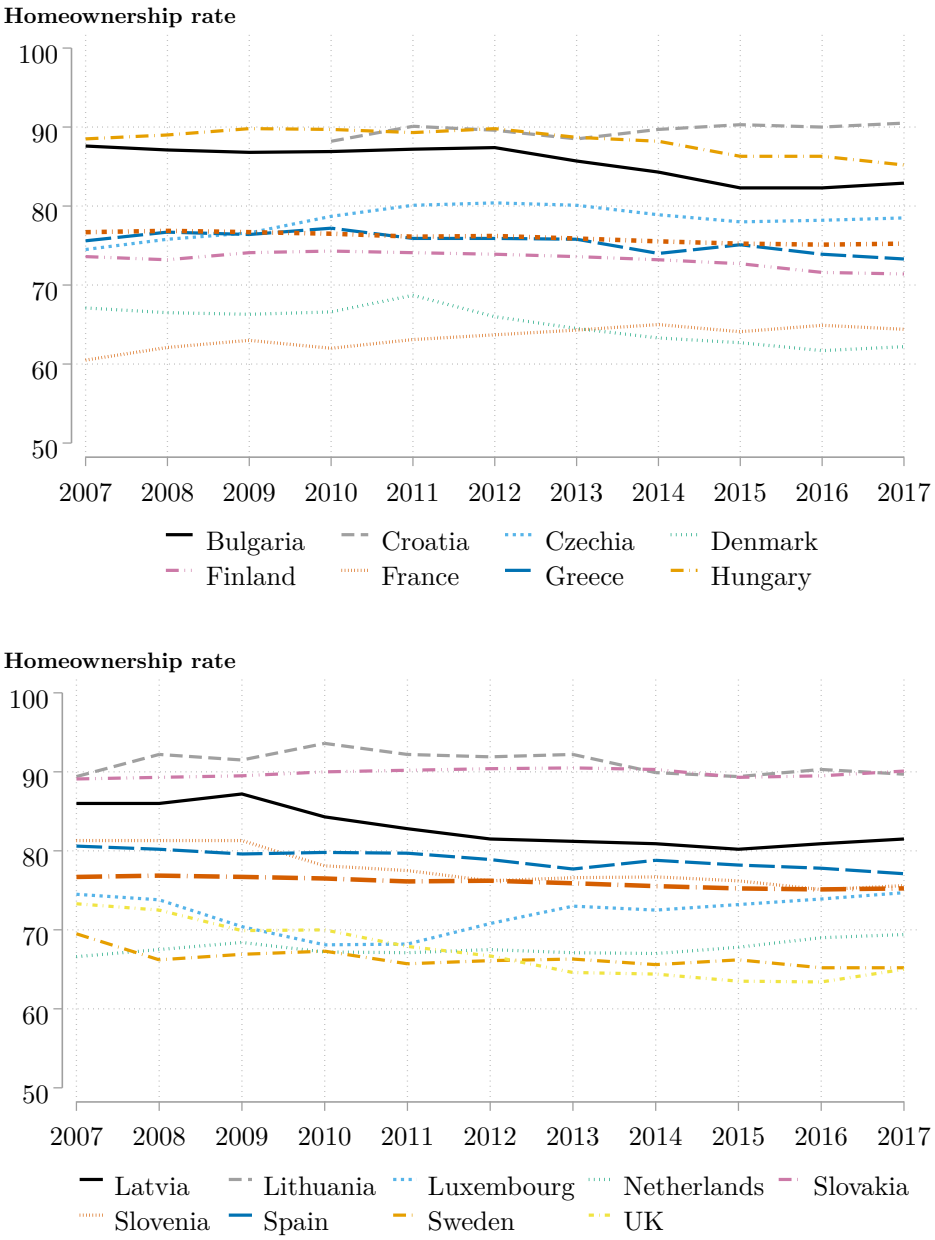

Figure 1: Homeownership rates across countries

Note: The figure shows the homeownership rate over time for all countries in the sample. The data source is EU-SILC. Panel a) plots results for Bulgaria, Croatia, Czechia, Denmark, Finland, France, Greece, and Hungary. Panel b) plots results for Latvia, Lithuania, Luxembourg, Netherlands, Slovakia, Slovenia, Spain, Sweden, and UK.

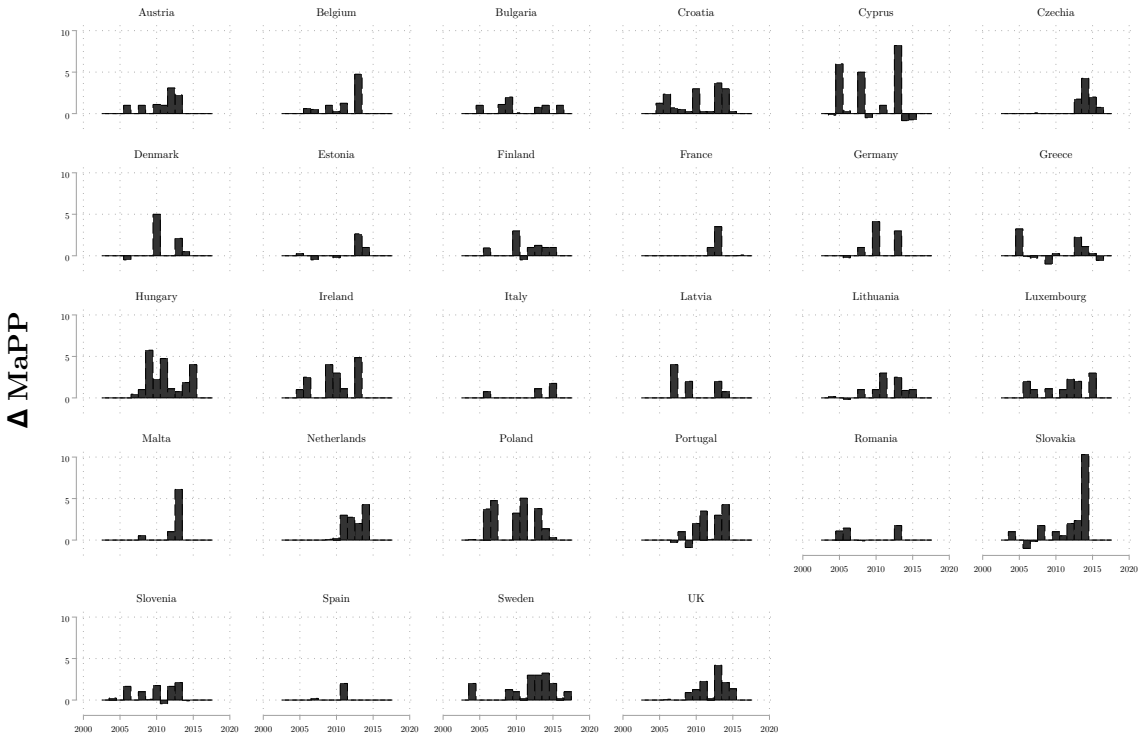

Figure 2: Macroprudential policy shocks by country

Note: The figure shows the macroprudential policy index over time for all countries in the sample. The data source is MaPPED database. Only policies included in the empirical analysis are included. This excludes policies with a countercyclical design.

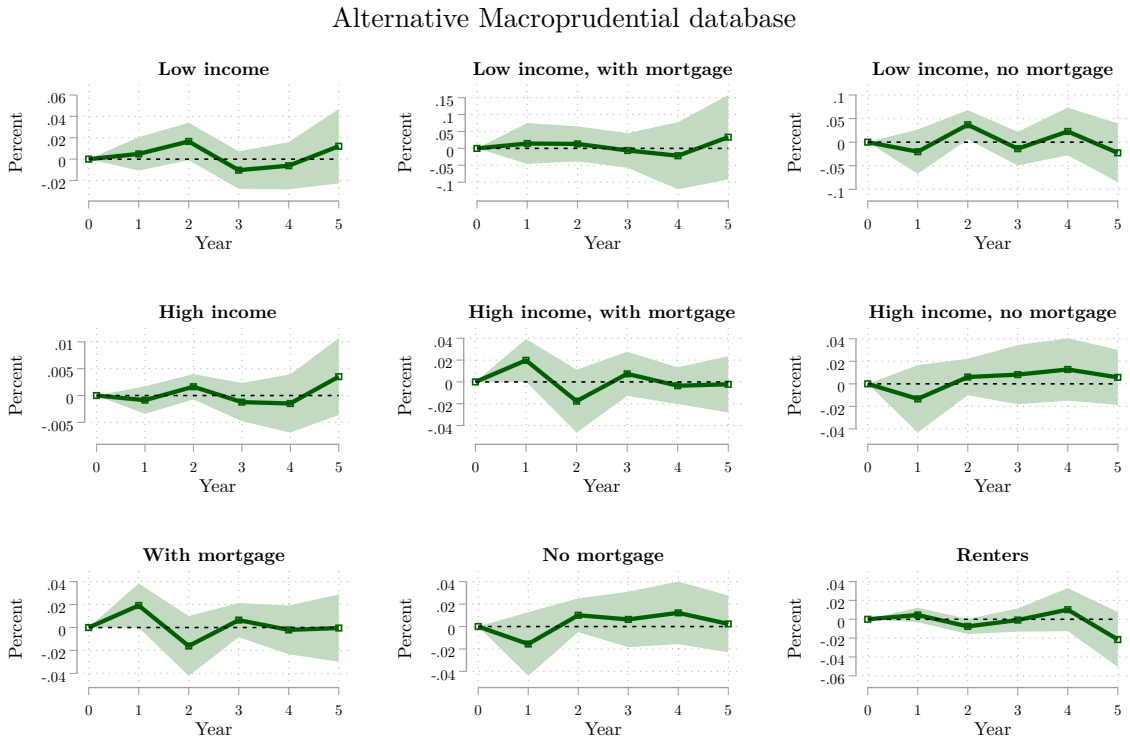

Figure 3: Linear projections with alternative macroprudential policy index

Note: The figure shows the macroprudential policy index over time for all countries in the sample. The data source is MaPPED database. Only policies included in the empirical analysis are included. This excludes policies with a countercyclical design.

10 Online Appendix: Tables

Table A1: Summary statistics

	Mean	Std. Dev	Median	Min	Max
Homeownership variables					
Ownership	71.84	8.00	72.80	51.70	89.80
Aggregate Ownership	0.00	0.02	-0.00	-0.09	0.17
With mortgage	0.02	0.08	0.01	-0.16	0.50
No mortgage	-0.01	0.14	-0.01	-1.55	0.83
High income, with mortgage	0.02	0.08	0.00	-0.17	0.45
Low income, with mortgage	0.02	0.19	0.00	-0.58	0.92
Macroprudential policy index					
Macroprudential policy index (MaPP)	5.71	5.81	3.95	-0.25	22.40
Change in MaPP	0.86	1.39	0.00	-1.00	5.75
Economic variables					
Δ GDP per capita	0.02	0.04	0.02	-0.10	0.32
Δ Final consumption per capita	0.02	0.03	0.02	-0.10	0.10
Δ Employment	0.00	0.02	0.01	-0.08	0.05
Δ Total population	0.00	0.01	0.00	-0.02	0.03
Δ Central bank interest rates	-0.43	0.71	-0.21	-3.71	1.25
Observations	191				

Notes: The table shows the summary statistics for the homeownership rate, the macroprudential policy index, and the control variables. The sample is all countries in the sample.

Table A2: Weighting Scheme for Different Macroprudential Policy Actions in Narrative Measure

Type of Policy Action	Weight	Strengthening / Loosening	Sign	Final Weight
Activation	1	Tightening	+	1
		Other/ambiguous impact		0
		Loosening	-	-1
Change in the Level	0.25	Tightening	+	0.25
		Other/ambiguous impact		0
		Loosening	-	-0.25
Change in the Scope	0.10	Tightening	+	0.10
		Other/ambiguous impact		0
		Loosening	-	-0.10
Maintaining the Existing Level and Scope	0.05	Tightening	+	0.05
		Other/ambiguous impact		0
		Loosening	-	-0.05

Notes: This table shows the weighting scheme used to construct the narrative measure of macroprudential policy actions. The final weight is calculated as the product of the base weight and the sign (+1 for tightening, -1 for loosening, 0 for ambiguous). Source: Meuleman & Vander Vennet (2020).

Table A3: Homeownership sample

			Homeownership rate			
Country	First year	Last year	First year	Last year	Average	Difference
Austria	2007	2019	59	55	56	-4
Belgium	2003	2019	73	71	72	-2
Bulgaria	2005	2019	85	84	85	-1
Croatia	2010	2019	88	90	90	2
Cyprus	2007	2019	74	68	72	-6
Czechia	2005	2019	74	79	78	5
Denmark	2003	2019	66	61	65	-5
Estonia	2006	2019	88	82	84	-6
Finland	2004	2019	71	71	73	0
France	2005	2018	62	65	63	3
Germany	2010	2019	53	51	52	-2
Greece	2007	2019	76	75	75	-1
Hungary	2005	2019	88	92	88	4
Ireland	2003	2018	80	70	74	-10
Italy	2004	2018	73	72	73	-1
Latvia	2007	2019	86	80	83	-6
Lithuania	2005	2019	88	90	91	2
Luxembourg	2007	2019	74	71	72	-3
Malta	2005	2019	80	80	80	0
Netherlands	2005	2019	64	69	67	5
Poland	2007	2019	62	84	79	22
Portugal	2004	2019	75	74	75	-1
Romania	2007	2019	96	96	96	0
Slovakia	2005	2018	82	91	89	9
Slovenia	2005	2019	83	75	78	-8
Spain	2007	2019	81	76	79	-5
Sweden	2004	2019	67	64	66	-3
UK	2005	2018	70	65	68	-5

Notes: The table provides information about available homeownership data for each country in our sample. The first column lists the first year where homeownership data is available and the second column lists the last year when homeownership data is available. The final three columns provides data on the homeownership rate in the first year, in the last year and on average for all years. Germany (2006, 2007, 2008 and 2009), Greece (2004, 2005 and 2006) and Turkey (2010) are missing data for select years.

Table A4: The effect of macroprudential policies on the homeownership rate

	(1) h=1	(2) h=2	(3) h=3	(4) h=4	(5) h=5
Panel A: No controls					
Δ MaPP	0.002	-0.001	-0.000	0.001	-0.002
	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Observations	291	291	288	260	232
Panel B: With controls					
Δ MaPP	0.005*	-0.001	-0.002	0.001	0.003
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)
L.Δ GDP per capita	0.060	-0.037	0.015	-0.170**	-0.002
	(0.039)	(0.040)	(0.094)	(0.078)	(0.100)
L.Inflation	0.140	-0.161	0.010	-0.213	0.159
	(0.213)	(0.168)	(0.189)	(0.215)	(0.247)
L.Δ House prices	-0.095*	-0.046	0.043	-0.026	0.102**
	(0.051)	(0.029)	(0.065)	(0.069)	(0.046)
L.Δ Credit to GDP	-0.108*	0.105	-0.049	0.104	-0.110
	(0.060)	(0.097)	(0.099)	(0.089)	(0.103)
L.Δ Central bank interest rates	-0.001	0.008**	-0.004	0.002	-0.004*
	(0.005)	(0.004)	(0.003)	(0.002)	(0.002)
L.Macroprudential policy index (MaPP)	0.001	0.000	-0.000	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	175	159	143	126	109

Notes: The table shows the effect of macroprudential policies on the homeownership rate. The coefficients are the same as in Figure 2. The dependent variable is the change in the homeownership rate, and the independent variable is the change in the number of macroprudential policies. The control variables are included in panel b. where "L" denotes lagged values of the control variables.

Table A5: The effect of macroprudential policies on the homeownership rat for different groups

	(1) h=1	(2) h=2	(3) h=3	(4) h=4	(5) h=5
Dep. var.: Low income					
Δ MaPP	-0.006	0.022***	-0.021*	0.009	0.015
	(0.007)	(0.007)	(0.010)	(0.009)	(0.012)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.101	-0.062	-0.089	-0.095	-0.153
Dep. var.: Low income, with mortgage					
Δ MaPP	-0.034	0.022	-0.011	-0.012	0.039
	(0.025)	(0.022)	(0.020)	(0.025)	(0.028)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.117	-0.156	-0.132	-0.086	-0.172
Dep. var.: Low income, no mortgage					
Δ MaPP	-0.004	0.018	-0.005	0.004	0.027
	(0.027)	(0.017)	(0.014)	(0.020)	(0.019)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.140	-0.100	-0.152	-0.173	-0.198
Dep. var.: High income					
Δ MaPP	0.006*	-0.003	0.000	0.001	0.001
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.096	-0.154	-0.195	-0.173	-0.186
Dep. var.: High income, with mortgage					
Δ MaPP	0.000	0.003	-0.004	0.004	0.005
	(0.008)	(0.005)	(0.004)	(0.004)	(0.006)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	0.050	0.012	-0.008	-0.075	-0.100
Dep. var.: High income, no mortgage					
Δ MaPP	0.003	-0.012	0.014	0.003	0.004
	(0.014)	(0.008)	(0.017)	(0.012)	(0.021)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.099	-0.079	-0.119	-0.098	-0.142
Dep. var.: With mortgage					
Δ MaPP	-0.001	0.004	-0.005	0.003	0.007
	(0.008)	(0.005)	(0.003)	(0.003)	(0.005)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	0.043	0.023	-0.005	-0.060	-0.085
Dep. var.: No mortgage					
Δ MaPP	0.002	-0.009	0.012	0.004	0.007
	(0.015)	(0.008)	(0.015)	(0.013)	(0.020)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.111	-0.085	-0.137	-0.125	-0.157
Dep. var.: Renters					
Δ MaPP	-0.010**	-0.001	0.004	-0.004	-0.002
	(0.004)	(0.005)	(0.006)	(0.004)	(0.005)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.032	-0.081	-0.160	-0.152	-0.246

Notes: The table shows the effect of macroprudential policies on the homeownership rate. The coefficients are the same as in Figure 3. The dependent variable is the change in the homeownership rate, and the independent variable is the change in the number of macroprudential policies. The control variables are included in panel b. where "L" denotes lagged values of the control variables.

Table A6: The effect of macroprudential policies on the homeownership rate for lending standard restrictions

	(1) h=1	(2) h=2	(3) h=3	(4) h=4	(5) h=5
Dep. var.: Low income					
Δ LSR	0.022**	0.009	0.000	-0.003	-0.008
	(0.009)	(0.010)	(0.011)	(0.009)	(0.021)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.090	-0.111	-0.141	-0.103	-0.175
Dep. var.: Low income, with mortgage					
Δ LSR	-0.037	0.014	0.013	-0.007	0.015
	(0.039)	(0.039)	(0.017)	(0.044)	(0.069)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.128	-0.163	-0.133	-0.089	-0.198
Dep. var.: Low income, no mortgage					
Δ LSR	0.015	0.078	-0.038	-0.026	0.010
	(0.050)	(0.065)	(0.029)	(0.031)	(0.046)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.139	-0.073	-0.144	-0.170	-0.206
Dep. var.: High income					
Δ LSR	0.002	-0.001	0.000	0.004*	-0.000
	(0.003)	(0.004)	(0.002)	(0.002)	(0.003)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.153	-0.169	-0.195	-0.165	-0.189
Dep. var.: High income, with mortgage					
Δ LSR	-0.017	0.026	-0.034**	0.014	0.005
	(0.015)	(0.018)	(0.013)	(0.009)	(0.009)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	0.070	0.060	0.090	-0.060	-0.106
Dep. var.: High income, no mortgage					
Δ LSR	-0.042	0.048	0.023**	-0.031	-0.002
	(0.041)	(0.053)	(0.011)	(0.027)	(0.010)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.085	-0.064	-0.120	-0.092	-0.143
Dep. var.: With mortgage					
Δ LSR	-0.018	0.023	-0.029**	0.011	0.008
	(0.017)	(0.018)	(0.011)	(0.012)	(0.012)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	0.064	0.058	0.065	-0.052	-0.095
Dep. var.: No mortgage					
Δ LSR	-0.036	0.054	0.013	-0.028	-0.002
	(0.043)	(0.055)	(0.009)	(0.026)	(0.014)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.101	-0.064	-0.140	-0.120	-0.158
Dep. var.: Renters					
Δ LSR	-0.017***	0.008	0.001	-0.015*	0.016
	(0.005)	(0.007)	(0.004)	(0.008)	(0.015)
Control variables	Yes	Yes	Yes	Yes	Yes
Observations	175	159	143	126	109
Adjusted R^2	-0.036	-0.073	-0.167	-0.133	-0.212

Notes: The table shows the effect of lending standard restrictions on the homeownership rate. The coefficients are the same as in Figure 4. The dependent variable is the change in the homeownership rate, and the independent variable is the change in the number of macroprudential policies. The control variables are included in panel b. where "L" denotes lagged values of the control variables.

A Online Appendix: Data

A.1 Macroeconomic data

I collect data from the national accounts for each country on the quarterly and annual level. The data is collected from Eurostat, unless otherwise indicated. From national accounts, I collect real GDP, final consumption expenditure, gross capital formation, total employment, and population. All variables are available at current prices or at purchasing power standard per capita. I also collect data on gross capital formation (divided into total fixed assets and total construction) in gross terms and as a share of GDP, and finally I collect the harmonised Indices of Consumer Prices (HICP) as a measure of inflation.

A.2 Credit, interest rates and house price data

I collect credit data from the BIS total credit statistics. The dataset includes credit data for a number of different countries and series, including credit to the non-financial sector and the government sector. The data is divided into two series on the lending side: Total credit and Bank credit. Total credit comprises lending from domestic banks, other domestic financial corporations, non-financial corporations and non-residents, whereas bank lending only includes credit from domestic banks to the private non-financial sector. On the borrowing side, total credit is broken down into the government sector and private non-financial sector, where the latter is further broken down into non-financial corporations and households (including non-profit institutions serving households).

I collect data on house prices from the detailed series of the BIS Residential Property Price database.[4] This data is collected from national sources and is available for a large number of countries. Finally, I collect central bank interest data from the BIS policy rate statistics.

A.3 Other sources of macroprudential policies

I collect data on macroprudential policies from the IMF's integrated Macroprudential Policy (iMaPP) Database, originally constructed by Alam *et al.* (2019). The database provides a

[4]For more information, see http://www.bis.org/statistics/pp.htm.

dummy-type indicator for tightening and loosening of various macroprudential policy tools, along with a description of each policy action. The database combines information from five existing database and the IMF's Macroprudential Policy Survey.[5] This dataset also contains data on the average LTV ratio. I collapse policies from the monthly to the annual level in order to match the frequency of our homeownership data.

I construct several indicators for policy actions. The ideal situation would be to have an indicator that captures both the intensity and the timing of any macroprudential policy change. However, since macroprudential policy instrument remain highly country-specific and often expand in scope over time, it is difficult to capture the intensity of a given policy action. I therefore construct policy indicators that capture the timing of policies, following most studies within the field. For instance, Akinci & Olmstead-Rumsey (2018) and Kuttner & Shim (2016) use an indicator that tracks whether a policy action was tightened, loosened or if there was no change. For country i at time t, the indicator $s^j_{i,t}$ denotes whether policy j was tightened, loosened or remained unchanged:

$$s^j_{i,t} = \begin{cases} 1, & \text{if policy instrument } j \text{ is tightened} \\ -1, & \text{if policy instrument } j \text{ is loosened} \\ 0 & \text{otherwise} \end{cases}$$

I use this indicator to define a net index $S^j_{i,k}$ as:

$$S^j_{i,t} = \sum_{k=0}^{t} s^j_{i,k} \tag{2}$$

This index represents the net cumulative number of policy actions taken by country i from time k until time t, where k is the earliest year where the homeownership data is available.

[5] More information about the database is available at https://www.elibrary-areaer.imf.org/Macroprudential/Pages/Home.aspx.