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Taming the real estate boom in the EU: Pathways to macroprudential (in)action

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Abstract

In the fallout of the 2008 crisis, macroprudential policy has been installed as the policy remedy against future financial instability, a primary focus being developments in the real estate sector. With house prices consistently rising in the EU since 2014, causing alarm among macroprudential supervisory bodies, a core question of EU regulatory governance is how far macroprudential bodies have been capable of bringing about countercyclical actions against the build-up of such vulnerabilities. This paper investigates this question using a novel dataset of macroprudential intensity coded for the 17 EU countries that experienced real estate vulnerabilities post-euro crisis. Specifically, it asks which configuration of conditions account for the (in)capacity of countries to impose stringent countercyclical regulations against housing booms? Using fuzzy set qualitative comparative analysis technics coupled with qualitative analysis of country cases using expert interviews, we find that the absence of political salience of homeownership and the political independence of macroprudential authorities to be crucial conditions that jointly explain countercyclical macroprudential activity. These findings, which show two pathways to action have implications for the capacity of the EU to prevent future crises and future reform of the EU prudential framework.

Keywords: central bank independence, macroprudential regulation, political salience, real estate booms.

1. Introduction

European housing markets have been in the grip of a heightening real estate boom in recent years. House price levels have indeed surged since the upward turn in the EU real estate cycle around 2014, with the COVID-19 shock accelerating rather than stopping this rise (ESRB, 2022a). European as well as national macroprudential bodies—the authorities tasked with mitigating systemic risk—have persistently warned about this build-up of financial vulnerabilities in the housing sector from 2016 onwards: the EU macroprudential authority—the European Systemic Risk Board (ESRB)—issuing for instance 19 housing-related warnings and recommendations for macroprudential action from 2016 to 2020 (ESRB (2016, 2019a)). This boom is a crucial test for the macroprudential frameworks, which were set up in the wake of the global financial crisis of 2008 to reduce the kinds of systemic risks that led to the crisis, including inter alia mitigating the fall-out of similar housing booms and if possible, taming them by constraining the access to housing credit (Baker, 2013). In an experimental fashion, these new frameworks were to implement the ideational shift that emerged post-crisis, opening up a new policy field, with policy frameworks and instruments largely untested (Baker, 2013). Since then, central banks (McPhilemy, 2016) and other administrative agencies involved have engaged in convoluted negotiations to install these policy devices in national frameworks, embedded in a larger supra-national European setting (Stellinga, 2021).

This experimentalist governance set-up (Zeitlin, 2016), characterized by common monitoring in the European center and national discretionary action is allowing for variation in the way macroprudential powers and policies

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are distributed between central banks and ministries of finance at the national level. This, as well as the differentiated political salience of housing in different countries, provides researchers crucial material to investigate the factors which shape policy responses to house price booms. This is not merely an academic question, because, as the financial crisis has shown, destabilizing housing booms threaten financial stability of the European Union (Constâncio et al., 2019), potentially requiring fiscal and monetary interventions by the ECB and member states. The distributed governance set-up may indeed have the potential to invite dynamics of collective inaction (Woll, 2014), whereby some member states do not act countercyclically on housing booms, in turn requiring ex-post interventions, in case boom turns to bust.

While the emergence of macroprudential ideas and consensus has seen ample research, there have so far only been limited empirical attempts to concretely analyze policy implementation, especially in the context of rise of sector-specific vulnerabilities. Today, more than a decade after the crisis, the recent housing boom is allowing researchers and policymakers to evaluate the reaction function of these diverse frameworks to a build-up of price pressures and credit expansion in the real estate market, that is, the speed and efficacy by which they reacted to it, enacting measures to constrain excessive mortgage lending and make the financial system resilient. Responding to this trend, most EU countries have recently activated some form of countercyclical or structural macroprudential measures to counter this development (s. ESRB, 2020) but to very different degrees and different effectiveness. Such variation in response is especially striking within a subset of 17 EU countries that have displayed a worrying build-up of real estate vulnerabilities since 2014, as identified by the ESRB. This reaction function is of primary interest to political economists, who have predicted these macroprudential actions likely to be weak, hindered by the political economy of house price appreciation (Baker, 2018, Fuller et al., 2019), but to date have not undertaken empirical studies to engage in more fine-grained empirical analyses of the factors impacting policy implementation. For this reason, we know little about how governance structures and political economy factors affected such decisionmaking, influencing the form and the extent these measures have taken in response to the cyclical upswing. This is what this paper proposes to analyze.

We compile a novel dataset explicitly coded for the purpose of capturing the intensity of the macroprudential response from 2010 to 2020 (pre-COVID-19), that is, if macroprudential policies were indeed introduced, what combination of policies was used and how strictly were they calibrated. We not only demonstrate the important variation in macroprudential response in the 17 EU countries that have been experiencing a real estate boom since 2014, but also provide an in-depth analysis of the factors which shaped these responses. This paper uses a mixed method approach combining qualitative analysis of country cases based on 10 expert interviews (see full list in Appendix E) and an analysis of official policy documents (such as IMF reports and/or reports of domestic macroprudential authorities) with fuzzy set qualitative comparative analysis (fsQCA), which is well suited for the analysis of small samples and of complex causal chains by handling configuration analysis rather than isolated variable testing, and possible asymmetry in the drivers of action versus inaction.

We provide an explanation that combines institutionalist elements regarding the governance set-up of macroprudential policies with the political economy of housing. Analyzing the dynamic interplay between institutional design of macroprudential policy apparatuses and the political salience of the access to housing finance, we show that institutional design matters, but even less independent institutional set-ups can lead to action when the political salience of housing is not too high. In this vein we identify two pathways or configurations that facilitate action and one which rules it out: On the one hand, a first cluster of cases enacts strict macroprudential measures based on a strong institutionalization of macroprudential policies at the helm of independent central banks. These latter institutions are thus not subject to political pressures regarding the politically contentious interventions in housing markets countercyclical policies require. On the other, a second cluster lies in countries where housing has a sufficiently low salience to allow macroprudential authorities to enact some macroprudential measures, even if in their governance set-up there is a sharing of power between central banks and political authorities, such as in the form of Financial Stability Councils. In contrast, countries with high political salience of access to homeownership and limited institutional anchoring of macroprudential policies see little action.

The rest of this paper proceeds as follows: Section 2 reviews the literature on the comparative political economy literature on countercyclical macroprudential action. Section 3 briefly documents the different real estate booms in Europe, which justifies our country selection. Section 4 presents our macroprudential policy dataset

and documents actions in the EU post-crisis, as well as describes the conditions we deem important to explain action. Section 5 presents our fsQCA empirical analysis and results. Section 6 discusses and Section 7 concludes.

2. Countercyclical macroprudential policy in the EU

2.1. The post-crisis macroprudential consensus on real estate and its implementation in the EU

Developments related to housing markets have shaped the political economy of the 21st century, or as Ben Ansell has put it, “the economic history of the first two decades of the twenty first century has been shaped by the international housing market” (Ansell, 2019, p. 166). As Schwartz and Seabrooke (2008) argue, it is possible to identify long run “Varieties of Residential Capitalism” or “housing finance systems” with distinct characteristics driving “political subjectivities and objective preferences not only for the level of public spending, but also for the nature and level of inflation and taxation.” (Schwartz & Seabrooke, 2008, p. 237). In this context, the global financial crisis which featured housing at its core certainly marked a shock to these systems and their associated political subjectivities and triggered—if not changes—reflections on existing housing policies. As a result, policymakers have established a policy program, which seeks to ensure financial stability, yet, this does not entail an expansion of the state in the provision of public housing. As Bohle and Seabrooke (2020, p. 412) put it, “while the return of the ‘housing question’ would have required renewed efforts at establishing housing as a social right, de facto policy makers sought to stabilise financial markets.”

This choice of “stabilization of financial markets” has been enshrined through a policy consensus formed around the concept and need for a “macroprudential” policy, that is, the use of primarily prudential tools to limit systemic risk (IMF-FSB-BIS, 2016). It also agreed that macroprudential regulation of real estate markets, that is the systemic supervision and possible anticipatory action against the build-up of real estate booms, is essential for safeguarding financial stability—the ultimate goal of macroprudential policy (CGFS, 2010).¹ This consensus reigns in particular in the EU and in the Euro-zone, where the project of financial integration and common interest rates are seen to potentially aggravate the problem of booms and busts (Constancio, 2014), which was one of the reasons why the countercyclical project was strongly embraced within the EU (Constâncio et al., 2019; Thiemann, 2019). And yet, the institutional set-up of this policy field has created doubts whether the EU and its member countries are indeed capable of implementing such policies, which due to their distributive consequences are often highly politicized (Baker, 2017, 2018; Thiemann & Stellinga, 2022; interview former member Financial Policy Committee, UK, April 21, 2021).

These doubts are reinforced in the case of the EU due to its distributed structure of political decisionmaking, whereby a large part of macroprudential regulation was delegated to the national level to react to these threats (Stellinga, 2021), while the monitoring of macroprudential threats was simultaneously located at the national and at the European level—a task undertaken by the European Systemic Risk Board, the European Commission and, from 2014 onwards, the European Central Bank. On the one hand, this literature is pointing to the empowerment of the European level through the creation of the ESRB in 2011, which is hosted by the European Central Bank (ECB) (McPhilemy, 2016; McPhilemy & Roche, 2013). It functions as the centralized institution that monitors the build-up of systemic risks in the EU, but has only the right to issue warnings and recommendations to national authorities, which are supposed to act or explain their deviation from the recommendation. On the other hand, most of the macro-prudential decisions, in particular those with respect to the housing sector, were delegated to the national level, with the EU recommending member states in 2011 to designate national macroprudential authorities that were to act against the build-up of systemic risks through the Capital Requirements Directive IV (Stellinga, 2021).

Both because of the potential distributional consequences of these measures, but also because of a lack of reliable indicators for the build-up of cyclical trends, there was a resistance to delegate these issues to the European level (Stellinga, 2021). In this vein, both the setting of the Countercyclical Capital Buffer (CCyB) as well as borrower-based measures, which restrict the capacity of different borrowers to take mortgages, based for instance on loan-to-income or debt-service-to-income (DSTI) remained at the national level. While from 2014 onward, the ECB has in theory the right to request a top-up of these measures in a given country, in case it deems them insufficient, the ECB has to date not exercised this right, instead seeking the dialogue with its national counterparts (interview former ECB manager, September 18, 2019, interview German Central Banker, June 18, 2021).

In the following years, these national macroprudential authorities and the ESRB/ECB hence engaged in an attempt to generate a common framework for the supervision of the build-up of such risks both domestically but also on the European level, with a particular focus on the housing sector. Collaborating in working groups at the ESRB, regulators agreed on a common framework for such an analysis as well as the datasets and measures that should be used, providing legitimacy to the analytical framework thus developed (Thiemann et al., 2021). As a consequence of this action, a large body of work exists today at the EU and the international level that is seeking to observe and communicate on the build-up of cyclical risks and to evaluate the measures taken to counter them (s. e.g., ESRB, 2016, 2019a; IMF, 2020). Yet, turning to the policy implementation phase, there has been little political economy work that seeks to understand the factors which prevent or facilitate such action on a comparative basis. In a sense, this is surprising as this macroprudential set-up in the EU is potentially enshrining dynamics of collective inaction (Woll, 2014) of certain governments regarding these housing booms, threatening financial stability of the EU as a whole. This in turn, as we will show, can be linked to the debate in EU studies on the advantages and disadvantages of experimentalist governance (Zeitlin, 2016).

2.2. Drivers of macroprudential policy action

Characterized by both high uncertainty and political salience (Stellinga, 2021), the question poses itself how political or technocratic decisionmaking bodies will fare with respect to these policies. Overall, the general literature on the political economy of macroprudential regulation is highly sceptical regarding the feasibility of such countercyclical macroprudential action. This is so, on the one hand, because of the high political stakes involved in such action (Baker, 2017, 2018; Goodhart, 2015; Tucker, 2018), a concern which seems particularly acute with respect to housing and on the other hand the fuzzy nature of macroprudential policy devices, at least initially (Goodhart, 2015; Stellinga, 2020). This prediction of inaction is mirrored in the technocratic literature, characterized by its concerns regarding an inaction bias due to these political economy concerns (s. e.g., Constancio, 2014). In this context, understanding why certain countries were able and not others to conduct countercyclical macroprudential policy appears particularly crucial, that is, understanding the different drivers enabling or impeding action.

2.2.1. Macroprudential governance

Due to this pre-occupation with the inaction bias, both in the technocratic and the academic literature, the main emphasis in the political economy literature on macroprudential action to date has so far been on the governance structures of decisionmaking bodies for macroprudential action, such as Financial Stability Councils, which might enable them to overcome it (Edge & Liang, 2019; Moschella & Pinto, 2021; Thiemann & Stellinga, 2022). As Edge and Liang put it, citing Peter Conti-Brown's work on the Federal Reserve "having the right institutional design ... isn't a side show to the real questions of monetary policy and financial regulation. Governance may in fact be the whole show." (2016, p. 26, as cited in Edge & Liang, 2019).

In these studies, the prime question pertains to the role that central banks assume in macroprudential frameworks (Moschella & Pinto, 2021) and the effects it has on the speed and extent of macroprudential action, with questions of policy coordination looming large in the analysis. In an early attempt to measure the impact of such settings on action, Lim et al. (2013) find a negative correlation between policy response time to financial vulnerabilities and the involvement of the central bank in macroprudential frameworks. Lombardi and Siklos (2016) suggest that higher score of macroprudential "capacity" is associated with lower credit growth. In a comparative study of macroprudential policy in the EU, Bengtsson (2019) similarly finds that institutions and political context matter, observing that if there is a single authority, there are higher chances of observing an active macroprudential stance. In contrast, Edge and Liang's (2020) study on the use of the CCyB finds that the probabilities to tighten the CCyB are higher in countries where an FSC or Ministry of Finance, not central banks, have direct authority in setting it and when FSCs with stronger governance mechanisms and fewer agencies. Lepers (2022) finds similar results for a larger set of macroprudential tools in a panel setting—Ministries of Finance appear better able than central banks to tighten macroprudential policy when the credit cycle expands, but finds that the existence of FSCs allowing for ex-ante deliberation and exchange of information cancels such difference.

This general concern over governance structures seems to be borne out by the few qualitative analyses of macroprudential actions in the EU. In this vein, Belfrage and Kallifatides (2018) find that in Sweden, fragmented

governance and the policy debates it invited hindered macroprudential action. On the other hand, in Eastern Europe, both within and outside of the Eurozone, countries have been identified as particularly active on the macroprudential front (Piroska et al., 2020) and the central banks are typically in charge of macroprudential decisionmaking.²

2.2.2. *Other explanatory factors beyond institutional variables*

Beyond governance structures, a broader literature suggests that additional factors are likely to condition macroprudential action, yet these factors have rarely been considered in empirical analyses. One such core factor relates to the role of crisis experience for macroprudential actions. This hypothesis can be connected to the postulated link in the political economy literature between financial market dynamics and policy reform; actors' policy preferences are not static but crucially depend on market sentiment: in this vein, in general, one expects to see little policy action during booms, but strong policy action following busts. Prior research would lead us to expect that the experience of a crisis plays a big role in the likelihood of tighter financial regulation (Young & Park, 2013)³—we may for instance expect that the more the financial crisis experience of 2008 was linked to a domestic housing market bubble, the more action we are likely to see as countries have learnt about the danger of unsustainable real estate cycles. In its study of Eastern Europe macroprudential policy, Piroska et al. (2020) notes for instance that the increased use of macroprudential measures in these countries can also be partially linked to path-dependent developments as these countries used these measures frequently in the 1990s and early 2000s to deal with currency fluctuations and capital flows (Piroska et al., 2020), creating precedent and know-how. On the other hand, a regulatory response right after the crisis in these countries might raise the resilience of the financial system and diminish the need and/or willingness to regulate further in the upward phase of the boom. It could also be that a house price correction having already occurred around 2008 in these countries limit the potential for a new bust and hence the need for action in the short run.

Another impactful factor for such macroprudential actions is likely the political salience of housing finance, that is the access to and the importance of finance to acquire residential real estate, impacting the degree to which the government will go along with macroprudential measures or seek to block them, their capacity to do so evidently conditioned by the governance structures debated above. Such salience stems from different factors, such as the role of the housing market in the broader economy (regarding both the degree of financialization of the economy and its reliance on the domestic construction and real estate sector to provide impulses to the economy) as well as the importance of the owner-occupied housing with respect to the rental market in the national economy.⁴ The salience of housing, and access to owner-occupied housing (often financed through mortgages), has been found to have a high variance between countries and over time, as measured by Kohl (2018a, 2018b) through mentions and support in political manifestos. High political salience of housing in countries due to difficult access to homeownership amidst limited homeownership rates may hamper macroprudential action that constrains credit. This is particularly the case if such salience has given rise to policy programs seeking to facilitate homeownership through subsidized credit and tax advantages, setting such policies in direct contradiction to possible countercyclical actions. These programs are often politically supported by owners of residential real estate, who benefit from a sustained housing boom.

The role of the private sector in driving or constraining macroprudential action is another area that has seen limited empirical tests with mixed results. As macroprudential policy may harm the profitability of the banking sector, it may be expected that the latter would lobby against the introduction of such regulation. Nevertheless, banks also benefit from systemic risk resilience. Bengtsson (2019) finds that in countries where banks are more powerful, a more limited macroprudential stance can be observed, a finding he links to the capacity of interest groups to exert political pressure. On the other hand, looking at banking sector concentration, share of politically connected firms, politicians in the board of banks, and private sector experience of central bankers, Müller (2023) finds no systematic evidence that regulatory capture by the private sector explains the election cycle in macroprudential policy. Young and Park (2013) surprisingly find that rather than being negatively associated with regulatory response patterns, as a “veto bloc”-type hypothesis would suggest, financialization was positively associated with significant regulatory response post-crisis. As such, the role of financial sector pressure on macroprudential action appears uncertain.

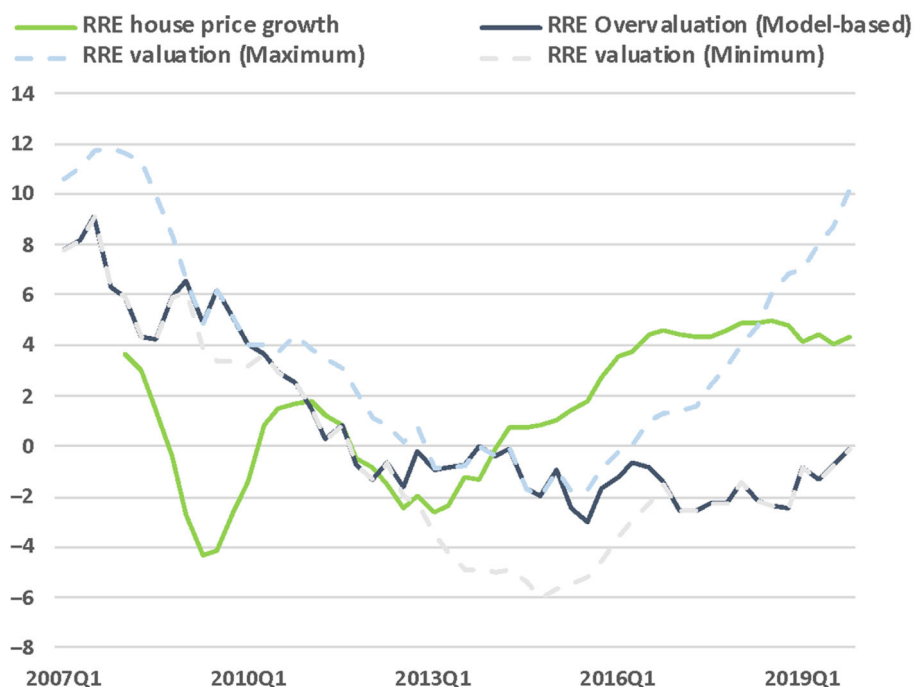
All in all, the literature provides us with mixed conclusive evidence on the importance of governance structures while leaving aside a number of highly plausible factors. More importantly, as this paper argues, the above-reviewed literature looked at these variables in isolation, while it may be the case that there are clusters or multiple pathways leading to action. What follows is an attempt to deepen this existing body of research by analyzing specific configurations of factors enabling countercyclical macroprudential action in the EU in the post-crisis period using technics suited for configuration analysis.

3. Case selection: Real estate developments in the EU in the post-crisis period

Our paper aims to understand the configurations leading to macroprudential (in)action when countries face housing booms. This last conditional part is important as doing nothing or relaxing the macroprudential stance may be an optimal policy choice depending on the state of financial vulnerabilities in a given country. It is however particularly difficult to pick a single financial stability metric against which to assess the appropriateness of macroprudential policy—the ultimate test to macroprudential policy being the lower likelihood of crises in the long run. We decide to abstract from decisions on a single (or set of) metrics and instead rely on the comprehensive multidimensional vulnerability assessments produced by the ESRB in the case of their residential real estate warnings in EU countries (see ESRB, 2016 for methodology).

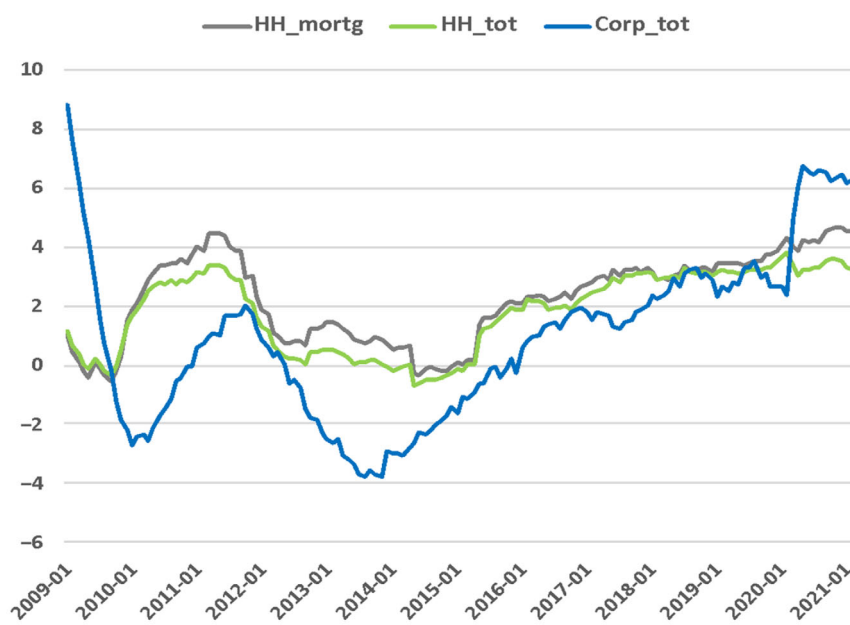
The EU-wide real estate price slowdown in the fallout of the 2008 crisis reversed in 2013, after which prices surged and real estate price valuation metrics trended upward (Fig. 1). House price growth remained strong at around 4% since 2016, a trend which did not show signs of weakening during the COVID-19 shock, quite the contrary (ECB, 2021). In line with this development, the volume of household mortgages trended upwards from 2015 onwards as well, with household mortgage credit growth also reaching 4% in 2021 (Fig. 2).

Observing these developments, the ESRB in 2020 concluded that most EU countries were in the expansion phase of the real estate cycle and issued warnings highlighting the dangerous build-up of financial vulnerabilities in the housing market at two occasions, in 2016 and 2019 (ESRB, 2016, 2019a), to a total of 17 countries, namely



Source: ECB, Authors' elaboration

Figure 1 Residential real estate price developments (Euro Area). Source: ECB, Authors' elaboration.



Source: ESRB, Authors' elaboration

Figure 2 Credit growth developments (Euro Area). *Source:* ESRB, Authors' elaboration.

Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Luxembourg, Malta, Netherlands, Portugal, Slovenia, Slovakia, Sweden, and the United Kingdom. As a result, this paper seeks to provide an analysis of the macroprudential policy response to the housing boom in these 17 countries.⁵

4. Outcome and conditions: Explaining macroprudential policy actions in the EU

4.1. The outcome: Macroprudential intensity in the EU in the post-crisis period

In response to vulnerabilities building up, a number of real estate-related macroprudential measures have been activated in European countries. In order to be able to compare the macroprudential response to these risks across different EU countries, and understand the drivers of this differentiated response, we need a measure of “macroprudential intensity” or stringency in a manner that captures regulatory actions along different kinds of policies, capture how strictly they are calibrated and enforced, and enable cross-country comparison (ESRB, 2019b). This approach should go beyond “extensity,” that is, assessing simply the absence or presence of tools, and would integrate the possibility of interactions across policies. More concretely, while it may be easy to “score” and compare a loan-to-value (LTV) cap of 80% in country A and a LTV cap of 90% in country B if they apply on the same types of loans and under the same conditions, a macroprudential intensity index has to assess the relative stringency of two different macroprudential tools (e.g., comparing an 80% LTV in country A and a 40% debt service to income cap in country B). Such an index also has to be able to score and compare combinations of tools (e.g., an LTV and a countercyclical capital buffer in country A vs. a higher risk weight on real estate exposures in country B). Our macroprudential intensity index is built to answer to these challenges and thus provides a comparable summary score per country of the stringency of the macroprudential policy response to the identified risks.⁶ This section explains the construction of such a measure, which will be our outcome variable.

4.1.1. Coding the activity and stringency of macroprudential policy

The index is constructed in several steps (further detailed in Appendix A): First, we compile a dataset of all macroprudential policy actions in the EU from the post-GFC to COVID-19 (January 2010 to January 2020). The bulk of our policy data comes from the MaPPED dataset developed by the ECB to provide comprehensive information on macroprudential policy in the banking sectors of the 28 EU member states. It covers 11 categories of

regulatory instruments, and almost 1700 policy actions, that is, events of introduction, recalibration, or cancellation of these instruments from 1995 to 2016. The data was collected through questionnaires sent to experts from national central banks and supervisory authorities of all EU member states enabling rigorous and comprehensive data collection (Budnik & Kleib, 2018). We cross-checked, harmonized, and complemented these data by the ESRB Macprudential Measures Database, which provides an exhaustive coverage of policy actions since 2014. Indeed, the Capital Requirements Directive IV and Capital Requirements Regulation (CRD/CRR) introduces requirements for macroprudential authorities of EU countries to notify the ESRB of macroprudential measures, which then enables and feeds into the ESRB dataset.

Once the list of all policy actions from 2010 to 2020 is collected, we extracted the specific macroprudential tools that may be used to lean against housing booms in a countercyclical fashion. Specifically, we decide to focus on the three types of policy tools addressing these risks:

- Borrower-based measures addressed at mortgage loans: LTV limits, debt service to income (DSTI) limits, as well as debt to income (DTI) and loan to income (LTI) limits and amortization requirements.⁷
- The countercyclical capital buffer (CCyB), the countercyclical tool *par excellence*. While not specific to housing, by increasing capital requirements for banks in good times, it may limit mortgage credit growth on the asset side of banks' balance sheets.
- Higher risk weights on real estate exposures, allowed under Article 458 of the CRR.

Third, in order to capture stringency of the regulations and compare across EU countries, we give an intensity score to each action, closely following coding rules in Eller et al. (2020) to allow for a within-country, cross-country, and cross-instrument comparison in the intensity of the macroprudential stance (see coding rules in Appendix A, Table A1). This is a major contribution compared to the existing literature which coded action with binary dummies without capturing the intensity of the policy action (see Appendix A for a review). We finally sum up the weighted actions to create an overall macroprudential policy index designed to capture policy reaction to the housing boom and focus on the change in macroprudential intensity to capture policy reaction over the period of interest.

4.1.2. Patterns of macroprudential policy in the EU in the post-crisis period

Our dataset reveals interesting stylized facts on the use of macroprudential policy in the EU. Figure 3 plots the resulting average macroprudential intensity index for our 17 EU countries, on a monthly basis as well as on a cumulative basis in the past decade. We note that discretionary macroprudential policy action unfolded as a

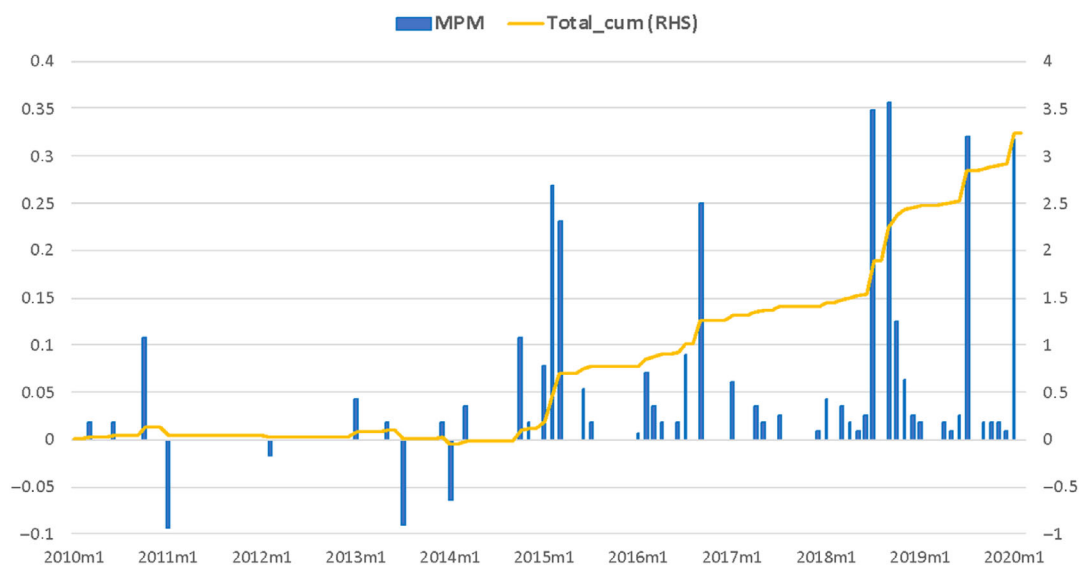


Figure 3 Macroprudential policy actions and intensity in 17 EU countries with residential real estate vulnerabilities.

Table 1 Change in macroprudential intensity in our 17 cases—2014m1–2020m2

	MPM
SK	11.50
AT	8.50
CZ	8.50
MT	7.50
SI	7.00
FR	6.65
EE	6.00
IE	6.00
SE	5.00
PT	4.50
UK	4.50
BE	4.00
DK	4.00
FI	4.00
LU	1.00
NL	1.00
DE	0.25

A caveat to be noted is that our coding rules do not capture the extent to which the measures are binding, that is, whether the limits are far from current practice, whether there are penalties associated with the non-respect of the limits, and the fact that measures may sometimes be supervisory recommendations and not pure obligations. MPM, macroprudential action.

pattern, which is reminiscent of a step-function, with crucial years being 2015 and 2018. Before 2014, very little discretionary macroprudential action can be observed, further justifying our focus on the period 2014 onwards.⁸

Table 1 displays the variance in the intensity of macroprudential policy for our 17 countries that experienced a house price boom since 2014, which this paper will seek to explain.

4.2. Expected conditions for macroprudential (in)action

Which country-specific configurations may explain such variance? The different conditions have to capture different aspects of country specificities, while being parsimonious enough to be interpretable and relevant as well as to suit our low N sample (17). Based on our review of existing work and analytical framework (Section 2), we decide to select an initial set of three conditions for our baseline, which we expect to be important determinants of macroprudential action:

- 1 Institutional independence of the macroprudential regulator.
- 2 Real estate crisis experience.
- 3 Political salience of housing-related issues.

In alternative models, presented in Appendix D.3, we test a number of other secondary conditions and combinations which may impact macroprudential activity. One aspect relates to banking sector characteristics that may lobby for a specific policy direction. We use bank profitability/banking sector concentration and/or the share of foreign banks, as imposing macroprudential action on either profitable banks or foreign banks should in principle be easier for a domestic government. Another condition that we consider is the degree of financialization of the housing sector, proxied by the share of homeowners with mortgages, which does not yield better explanation of the variance. The last condition we consider is the capacity of national central banks to take an independent monetary policy stance. For those countries, which are part of the Euro-zone, this possibility indeed does not exist, raising the possibility that macroprudential action comes to compensate for a monetary policy which is too accommodative for the individual country. On the other hand, countries with independent monetary policy in Eastern Europe, but also the United Kingdom, Sweden, and Denmark could have implemented monetary policy to “lean against the wind.”

4.2.1. Condition 1: Macroprudential institutional independence

As highlighted by existing work, the independence of the macroprudential authority from political interference appears the prime institutional factor to consider, expecting countries with high institutional independence to be associated with tighter macroprudential policy. To construct such measure, we start from and adjust the index computed in Lepers (2022) that first determines which institution has the hard macroprudential powers and then weighs that institution by its degree of political independence, for example, if the central bank has full authority over macroprudential authority without *de jure* involvement by the executive, but has no independence from it, it will score lower. One important feature to consider is the fact that different macroprudential policies may be set by different entities. It appears that the bulk of the variance is between who sets capital-based tools (CAP), including the countercyclical capital buffer, and who sets borrower-based (BB) measures such as LTV caps. The latter due to their political nature often remained under the prerogatives of Ministries of Finance, whereas measures linked to capital requirements were more often delegated to national central banks (see Table A3). We weigh the score of the central bank, the prudential regulator, or the financial stability committee by their degree of political independence. Details of the coding are described in Appendix B.

4.2.2. Condition 2: Real estate crisis experience

Widely used datasets of banking crises (e.g., Laeven & Valencia, 2012) are not suitable for our aim, as we are specifically interested here in the housing-related crises. We indeed argue that real estate macroprudential policy would depend on experiences specific to the housing market. We thus prefer to use the real estate crises data of Bengtsson et al. (2020) which provides a quantitative rather than expert-defined crisis dataset. The final list of EU countries deemed to experience a real estate crisis is 13 countries: DK, EE, ES, GR, HU, IE, LT, LV, NL, PT, SI, SK, UK, of which only LV, ES, GR, and HU are not in our sample. While, as discussed in Section 2, we can expect crisis experience to impact the likelihood of macroprudential action, there are no strong priors as to the direction of the impact.

4.2.3. Condition 3: Political salience

To proxy the political salience of homeownership and the access to housing finance, we use a measure based on the mentions and support for homeownership in party manifestos. Specifically, for each party, we code as 1 those that mention and support homeownership in their manifesto in a given election leveraging on the dataset of Kohl (2018a) which collected data on housing content of political manifestos for 19 countries over several decades. We expanded Kohl's dataset, which only included 11 out of our 17 countries and which stopped in 2013. We completed the coding, adding the manifestos of the additional 6 countries and added all additional elections from 2013 to 2019 for the 17 countries. We then computed for each election the share of parties that promoted homeownership and took the average of this score across all executive elections since 2010. As discussed in Section 2, it is expected that countries with high political salience be associated with looser macroprudential regulation.

The raw data for our outcome (macroprudential action—MPM) and our three core conditions are displayed in Table 2, ranked by the most intense macroprudential response to the lowest. At first sight, no striking pattern emerges as to any of the conditions being obviously correlated with that ranking.

5. Explaining macroprudential tightening in the boom phase (2014–2020)

Having, first, selected the countries to analyze (Section 3), second, defined and coded the policy outcome to be explained (Section 4.1), and, third, defined three core conditions which we expect to matter for explaining such outcome (Section 4.2), this section now turns to our empirical analysis that aims at better appreciating the configurations that lead to an active versus a passive macroprudential stance in different EU countries.

5.1. Fuzzy set qualitative comparative analysis as inference method

We decided to perform a fuzzy set qualitative comparative analysis (fsQCA) (Ragin, 2000; Schneider & Wagemann, 2012; Thomann & Maggetti, 2020) on the different cases. QCA methods have been used in recent work in international relations (Ide and Mello, 2022), political economy, public administration, and regulatory

Table 2 Raw data

		MPM	Salience	Crisis	Institutional independence
1	SK	11.50	0.51	1	0.58
2	AT	8.50	0.18	0	0.31
3	CZ	8.50	0.21	0	0.65
4	MT	7.50	0.50	0	0.58
5	SI	7.00	0.59	1	0.39
6	FR	6.65	0.26	0	0.26
7	EE	6.00	0.17	1	0.77
8	IE	6.00	0.85	1	0.58
9	SE	5.00	0.17	0	0.06
10	PT	4.50	0.43	1	0.58
11	UK	4.50	0.47	1	0.58
12	BE	4.00	0.56	0	0.29
13	DK	4.00	0.36	1	0.00
14	FI	4.00	0.11	0	0.21
15	LU	1.00	0.50	0	0.00
16	NL	1.00	0.61	1	0.29
17	DE	0.25	0.39	0	0.00

MPM, macroprudential action.

governance ranging from explaining economic belief changes of eurozone leaders (Swinkels, 2020), to EU national reform programs (Cacciatore et al., 2015) redistribution objectives of regulatory agencies (Donadelli & van der Heijden, 2022), national regulatory responses to the global financial crisis (Young & Park, 2013) and closest to the present paper, de facto independence of regulatory agencies after delegation (Maggetti, 2007).⁹

The motivation for this choice of inference method is threefold: First, the limited number of EU countries that experienced a housing boom in the period of interest (17) makes a regression analysis unsuitable, while a small-N qualitative case study is not practical either. FsQCA thus appears the optimal method in this case, as it allows us to fully exploit the variance among our cases to find patterns and configurations explaining macroprudential action. In addition, our subset of cases are similar in the sense that they are all facing real estate vulnerabilities, while having very different outcomes—the ideal scenario for fsQCA analysis according to Berg-Schlosser and De Meur (2009). Second, our reading of primary and secondary sources on macroprudential actions hints at complex chains of circumstances and multiplicity of factors leading to decisions. Causal complexity in QCA is understood in terms of *conjunctural causation* and *equifinality*. As defined in Cacciatore et al. (2015, p. 1192), “conjunctural causation refers to the fact that conditions usually appear in combinations and not isolated from one another” while equifinality highlights that “there can be more than one sufficient condition (or combination thereof) that implies the outcome, and sufficient conditions can be alternatives to one another.” As such, QCA appears appropriate on this front too as its main goal, in contrast to regression analysis, is to find pathways leading to macroprudential action rather than testing the competing significance of individual variables in explaining more or less variation in an outcome. Finally, QCA incorporates the possibility of *asymmetry*, that is, “the fact that the explanation of the negative outcome, i.e., the absence of a phenomenon, cannot (and should not) automatically be inferred from the explanation of the positive outcome—in certain cases, even completely different sets of conditions should be used” (Cacciatore et al., 2015, p. 1192). In our case, this means that some conditions or combination of conditions may explain macroprudential action while others may explain macroprudential inaction.

5.2. Pathways to macroprudential (in)action

The raw data displayed in Table 2 are transformed into *fuzzy sets* as described in Appendix C, fitting the outcome and the conditions into a 0–1 scale with a logarithmic function along three predefined thresholds for full membership, indifference point, and non-membership. We then perform an analysis of the conditions or set of

Table 3 Necessity analysis for individual conditions

	MPM			~MPM		
	Cons.Nec	Cov.Nec	RoN	Cons.Nec	Cov.Nec	RoN
SAL	0.685	0.605	0.539	0.878	0.508	0.484
CRI	0.490	0.629	0.752	0.441	0.371	0.641
INS	0.761	0.830	0.826	0.440	0.314	0.540
~SAL	0.443	0.847	0.934	0.318	0.399	0.783
~CRI	0.510	0.582	0.680	0.559	0.418	0.604
~INS	0.371	0.503	0.714	0.762	0.677	0.794

“~” Denotes the negative or absence of membership to a condition or outcome. Cons.Nec displays the consistency value for the necessity analysis and Cov.Nec the coverage value. RoN is the relevance of necessity, as suggested by Schneider and Wagemann (2012). CRI, experience of a real estate crisis; INS, institutional independence; MPM, macroprudential action; SAL, political salience.

conditions *necessary* or *sufficient* to explain the different degrees of macroprudential action and inaction separately. The significance of each (set of) conditions is assessed by its consistency and coverage value, which respectively tell us whether and how well the data allow a condition to be defined as sufficient or necessary respectively, and to what degree a condition covers the degrees of membership in the outcome, or, in more simple terms, its specific contribution to an explanation.

5.2.1. Necessity analysis

Starting from the identification of necessary conditions, we do not find evidence that membership (or its absence, denoted with a tilde) in any of our three conditions is necessary in explaining macroprudential policy action, nor inaction (Table 3). Indeed, no condition crosses the consistency threshold of 0.9 suggested by Schneider and Wagemann (2012), with salience of homeownership coming closest to the threshold value for the negative outcome. This adds credit to our hypothesis that macroprudential (in)action has complex causal chains that cannot be narrowed to a single explanation.

5.2.2. Sufficiency analysis

We now turn to the core of our analysis, which is about identifying (combinations of) conditions that would be *sufficient* in explaining differentiated patterns of macroprudential policy in our 17 countries. The analysis of sufficiency usually indicates more than one *equifinal* sufficient conjunction of conditions and each of these so-called *pathways* is in itself a sufficient condition for the outcome: in case any of them becomes manifest, the outcome also ought to be present. The sufficiency analysis is based on the analysis of *truth tables* (provided in our case in the Appendix as Tables A5 and A6), which are minimized thanks to Boolean algebra and in particular the Quine-McCluskey algorithm to provide solutions. We display below the results separately for macroprudential action and inaction.

5.2.2.1. Positive outcome: Macroprudential action. The solution for MPM action is $INS + \sim SAL \times \sim CRI \rightarrow MPM$. This means two configurations or pathways may be sufficient to explain macroprudential response to a real estate boom: The first path is a strong institutionalization of macroprudential policy with a macroprudential regulator that is largely insulated from political pressure, which explains macroprudential action in the majority of countries, namely the Czech Republic, Estonia, Slovenia, Portugal, United Kingdom, Ireland, Malta, and Slovakia. Notable here is that this group of countries includes both countries from Eastern Europe, signaled as highly active on macroprudential measures due to their past experience in the 1990s (Johnson, 2016; Piroška et al., 2020) as well as countries from Western Europe. Prior housing crises experience on the other hand is not a determining factor in and of itself, as they were experienced by some of the countries (such as the United Kingdom, Estonia, or Portugal), yet it is not a part of this path (Table 4).

The second pathway is characterized by a low salience of housing in political discussions and no crisis experience in 2008 linked to real estate,¹⁰ regardless of institutional independence of macroprudential authorities. This is the pathway toward macroprudential action for Austria, Finland, France, Sweden, and the Czech Republic, the

Table 4 Macroprudential action: Conservative solution

		inclS	PRI	covS	covU	Cases
1	INS	0.830	0.769	0.761	0.574	CZ; EE; MT; IE; PT; SI; SK; UK
2	\sim SAL \times \sim CRI	0.798	0.726	0.315	0.127	AT, FI, FR, SE; CZ
	MI	0.796	0.726	0.888		

There are different kinds of solutions that can be produced by the algorithm; we focus on the conservative one, as per Schneider and Wagemann (2012). We nonetheless also extract the parsimonious solution (Table A7), which would capture counterfactuals for configurations with missing data (the problem is very limited in our case as there is only one missing row in the truth table—Table A5). “ \sim ” Denotes the negative or absence of membership to a condition or outcome. inclS displays the consistency or inclusion value for the sufficiency analysis, PRI is the proportional reduction in inconsistency introduced by Ragin (2006), and CovS and CovU are the raw and unique coverage values. CRI, experience of a real estate crisis; INS, institutional independence; SAL, political salience.

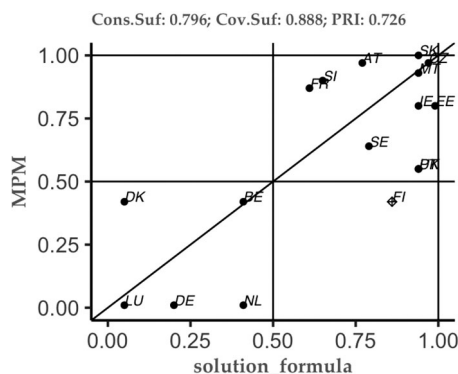


Figure 4 Conservative solution sufficiency plot.

latter being a member of both groups. Figure 4 locates graphically all of our cases alongside the macroprudential response (Y-axis) and our fsQCA solution (X-axis).

The upper right case is the case where the solution set is assembled. In this quadrant, the majority of cases (12) are located. These cases can be deemed well explained by our two pathways, being at the same time good instances of any of the two solutions (high x values) and of the outcome (high y values). Most importantly, there are no cases in the upper-left corner, which means that there are no cases of countercyclically active countries which are not explained in our solution and pathways. Inactive countries are irrelevant for the analysis of macroprudential action insofar as they are not predicted to lead to actions by any of our two pathways as it is case, all falling in the lower left corner. Borderline cases on the Y-axis are treated in more detail in the qualitative discussion below.

Figure 4 hence shows that our two pathways provide a strong solution to explain overall countercyclical macroprudential policy, with all cases that are classified as having “responded” to different degrees with macroprudential action to the financial stability risks being in the upper right quadrant. This is reflected in the good consistency value of 0.796 and high coverage score of 0.888.

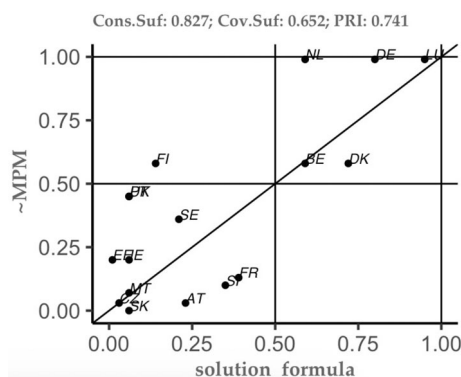
5.2.2.2. Negative outcome: Lack of macroprudential action. We now turn to macroprudential inaction/weak action. Six countries are considered, to different degrees, to belong to the group of weak macroprudential action in our sample: BE, DE, DK, FI, LU, and NL. The new conservative solution to explain these different degrees of “inaction” is displayed in Table 5 and the full solution is plotted graphically in Figure 5. The results show that salience of housing while at the same time lacking independent institutionalization of macroprudential authorities explain the developments very well in all five countries with the exception of Finland.

As can be seen from Figure 5, Netherlands, Germany, and Luxembourg fit this explanation particularly well, whereas Denmark and Belgium are borderline cases, fulfilling the conditions of the pathways (namely high

Table 5 Macroprudential inaction: Conservative solution

		inclS	PRI	covS	covU	Cases
1	SAL × ~INS	0.827	0.741	0.652	—	BE, DE, LU; DK, NL
	M1	0.827	0.741	0.652		

The parsimonious solution is identical to the conservative one. “~” Denotes the negative or absence of membership to a condition or outcome. inclS displays the consistency or inclusion value for the sufficiency analysis, PRI is the proportional reduction in inconsistency introduced by Ragin (2006), and CovS and CovU are the raw and unique coverage values. INS, institutional independence; SAL, political salience.

**Figure 5** Conservative solution plot for the negative outcome.

salience and lack of institutionalization), but still showing some macroprudential action, while Finland show the same level of macroprudential action but is not part of the solution.

5.2.3. Robustness to alternative models

We run a number of alternative models to confirm the robustness of our findings to different parameters selection and coding of conditions, with the findings presented in Appendix D (Tables A8–A18). First, we consider whether the difference in degree of vulnerabilities of the countries in our sample impacts substantially our results (Appendix D.1) and find that our baseline results are broadly confirmed: for macroprudential action, the institutional independence pathway becomes the strongest, covering most of the countries that have acted, while the lack of salience pathway becomes less relevant. The main pathway to macroprudential *inaction* is still a high political salience of homeownership and a lack of institutional independence, complemented with a path related to a lack of institutional independence and an absence of crisis. Second, we try to better capture the fact that the legal basis for implementing borrower-based measures, be it by the government, the central bank or any other institution, in some countries does not even exist, adding a fourth condition capturing this dimension in our model, conforming the findings are robust to this addition (Appendix D.2). Third, we try different combinations of conditions 3 and 4 in line with what our literature review identified as potentially relevant conditions and find that our baseline condition 3 provides the best solution in terms of consistency, coverage, and simplicity of the pathways (Appendix D.3).

6. Qualitative discussion of the findings

Our FsQCA analysis reveals two pathways to action and one to inaction, all shaped by the conditioning factors of institutionalization of these policies and the political salience of housing.

6.1. The first pathway to macroprudential action: Institutionalized independence

The first path is based on a strong institutionalization of macroprudential policy with a macroprudential regulator that is largely insulated from political pressure, which explains strong macroprudential action in the majority

of countries (nine cases). It points to the importance of a strong role of central banks in the setting of macroprudential measures when the housing cycle turns again to the expansion phase, in conjunction with their capacity to enact legally binding countercyclical capital buffers. A lack of institutional independence is also found as part of the solution (together with a high political salience) to explain macroprudential *inaction*.

The cases of the Netherlands and Ireland are enlightening in this respect, as both countries experienced a crisis after their respective housing booms in the 2000s. As a reaction to the crisis, both countries enacted macroprudential measures, including a first tightening of LTV ratios. Yet, in the Netherlands, after these first measures were enacted, change agents at the DNB pushing for a further tightening saw themselves and their actions constrained by their lacking prerogatives regarding the LTV and other borrower-based measures (Thiemann & Stellinga, 2022). In contrast, the Irish Central Bank, placed in charge of imposing such measures used its prerogatives to tighten from 2015 onwards. We see similar actions by central banks placed in charge of these measures in the United Kingdom, Slovenia, Slovakia, the Czech Republic, and Portugal. On the other hand, in countries with authorities that are strongly dependent on political decisionmaking, such as Germany, Luxembourg, the Netherlands (and to a lower extent Denmark), substantial countercyclical macroprudential action is not occurring, blocked by political considerations regarding the access to housing (interview German Ministry of Finance, July 20, 2021, interview German Central Banker, July 9, 2021, for the case of Netherlands, s. Thiemann & Stellinga, 2022). It may be noted that these relatively non-intervening countries (DE, DK and NL) fit the corporatist camp as identified in the earlier mentioned VoRC typology of Schwartz and Seabrooke (2008) characterized by high mortgage to GDP ratios and limited owner occupation. This clearly links to the second leg of our pathway to inaction (Table 5) where in addition to low independence points to high political salience of homeownership that may be explained by the limited supply of housing in these countries.

6.2. Second pathway to macroprudential action: Low political salience and instituted dialogue

A second pathway we found is linked to a lack of political salience of housing, which permits even bodies that are not as independent as central banks, but still more independent than political bodies such as ministries of finance to enact anti-cyclical policies. These cases show that a second decisive factor which shapes the pathways to (in)action is the salience of housing as a political issue (as measured by campaign manifestos). All countries, where there is limited to no macroprudential action in the light of a housing boom are countries where housing has a high political salience, in conjunction with weakly institutionalized macroprudential authorities. In contrast, the countries in which we do observe action, despite the macroprudential authorities not being completely independent, have low salience for housing issues. Only in countries with strongly independent macroprudential authorities, the factor of salience does not act as a decisive constraining condition.

When looking at our positively identified cases in the QCA for macroprudential action, two cases stand out in particular in this respect, namely Austria and France, which are particularly strong in terms of action, but have a rather weakly independent macroprudential regime (the pathway of low salience and no crisis experience). Here, in contrast to the other explained cases, these cases do not have the central bank in a strong institutional leadership position on macroprudential regulation nor do they have a history of such measures in the past. Instead, in Austria and France, Financial Stability Councils decided to enact measures, councils usually deemed rather weak institutionally, aided by the low political salience of housing. Austria and France appear once again to fit the statist group of Schwartz and Seabrooke (2008), which can be linked to the legitimization of state action in the economy in these countries. However, our findings are more mixed here as other statist countries, such as Finland, have adopted much more limited levels of action.

In Austria, the financial stability council was constituted in 2014, with the Ministry of Finance at its helm. It suggested the introduction of borrower-based measures in June 2016, which was succeeded by the introduction of these measures in 2017, in a move, which went rather unnoticed (Wolfbauer, 2017). This was followed up in 2018 by a tightening of these measures, DSTI, LTI, and Amortization requirements respectively, initially formulated as recommendations to ease their implementation (interview Austrian Financial Stability Council member, April 7, 2022). In this case, it seems the low salience made these measures somewhat easier to implement. But even here, the political nature of housing-related measures made the Council act cautiously, anticipating political

headwinds, enacting first a recommendation, which were hardened when industry showed no reaction whatsoever (Wolfbauer, 2017).

In the same vein, in France the topic of housing had a relatively low salience, facilitating macroprudential action by the financial stability council. While banks are not very profitable, the macroprudential decisions are placed within a Financial Stability Council, which is presided over by the Ministry of Finance. An institutional peculiarity of this framework, which is hard to capture in our coding of independence, is that the Banque de France has the right to public recommendations, granting it agenda setting power (interview former French Treasury official, June 11, 2021). The Banque de France used this power extensively to push in the Financial Stability Council for countercyclical action (interview French central banker, April 8, 2021), including both the CCyB as well as borrower-based measures, which were enacted after several years of debate in 2019 (interview second French central banker, May 20, 2021). Hence, a pro-active central bank pushing for measures was empowered by the institutional set-up and advantaged by the lack of high salience in pushing through borrower-based measures. Nevertheless, it took them several years to overcome concerns by the Ministry of Finance regarding the constraining impact of macroprudential measures on young couples' access to the housing market.

6.3. Discussion of borderline cases

The impact of these political sensitivities becomes particularly evident for the three borderline cases, for which our QCA is relatively silent as they do not fall completely within membership or absence of membership in the outcome, namely Finland, Belgium, and Denmark all reaching the indifference score on MPM (4). When seeking to explain these borderline cases, we can point to the lack of legal prerogatives for the macroprudential authorities in these countries to install broad borrower-based measures on their own (ESRB, 2021), despite their own wishes to the contrary (IMF, 2018a, p. 25; IMF, 2018b, p. 63), as one factor which explains limited action. In the case of Finland, the low salience of housing and a largely autonomous authority would lead us to expect a higher degree of countercyclical action than what can be finally observed. However, the lack of binding borrower-based measures, such as DSTI, DTI, and LTV measures (other than loan to collateral) until 2021 is a very important element in explaining this muted response, as the Finnish authority simply did not have the tools at its disposal to enact countercyclical measures (s. ESRB, 2021, p. 28), even if it strongly pushed for such measures.¹¹

In the case of Belgium, while the capital requirements enshrined in the EU package are directly controlled by the NBB, all other cyclical measures to be implemented are subject to governmental approval (IMF, 2020, p. 19). The limited action in Belgium then can be linked to the political salience of housing in Belgium, where the government refused to install additional countercyclical measures proposed by the Belgian Central Bank in 2017. Reacting to this refusal by government, the NBB enacted in April 2018 a further tightening of the risk weights on mortgages and in 2019 raised the CCyB and clarified its prudential expectations with respect to mortgages, "urging financial institutions to exercise more restraint in granting mortgage loans with very high loan-to-value ratios" (NBB, 2019, p. 1). These measures, formulated as expectations circumvented the governmental veto, yet allowed the central bank to act upon the lending behavior by banks on a "comply or explain" basis.¹²

In Denmark, the high salience of housing (Seabrooke, 2012) coupled with low political independence of the macroprudential authority made the imposition of constraining borrower-based measures very difficult (interview member Danish systemic risk council, February 21, 2022). While a Systemic Risk Council has been installed to make proposals regarding such measures, it is the government that decides upon their implementation (Jensen & Salling, 2023). The government in turn repeatedly decided against enacting such measures since 2017, even intervening in the decisionmaking process *ex ante*, by having its opposition be conveyed through members of the government in the Council, which made members abstain from voting for tougher measures (interview member Danish systemic risk council, February 21, 2022). In response, the Systemic Risk Council used its prerogatives to set the CCyB to 2% in 2019, as government members of the council have no voting right with respect to the CCyB (Jensen & Salling, 2023), yet no meaningful borrower-based measures have been forthcoming. The availability of borrower-based measures (such as LTI, DSTI, DTI, and LTV measures) and/or the question of who can set these tools (the question of legal prerogatives) hence appear important factors explaining the stringency of discretionary action in these three cases.

7. Concluding remarks

This paper set out to investigate the reaction of EU member states to the housing boom which occurred in the EU from 2014 onwards. Specifically, it focuses on the intensity of the response in the 17 countries which have been experiencing a worrying build-up of housing vulnerabilities as proxied by ESRB warnings. Leveraging on a newly compiled dataset of macroprudential intensity, it seeks to explain which configurations of conditions explain the variance in the macroprudential response in these countries. Our analysis confirms that macroprudential action cannot be explained by a single explanatory condition in isolation and instead highlights two different pathways to action: On the one hand, when independent authorities are in charge, we see countercyclical action independent of the salience of housing in that country. Even under the institutionally weaker form of financial stability councils which is mixing technocrats and politicians, such action can still occur given that housing is not an overly salient political issue. If it is, however, we find very limited to no countercyclical action. These findings are in line with Benoit's (2021) call for researchers not to lose sight of, but at the same time to go beyond, formal mechanisms of independence and controls to understand governance dynamics of autonomy and reputation.

Our qualitative analysis also points to incomplete legal frameworks as evidently constraining the capacity of macroprudential authorities to act. The differential evolution of these frameworks should however not be seen as independent of the larger political economy battle surrounding the imposition of macroprudential measures, but instead as at least partly an expression of it. Forces in parliament and government, which fear such measures due to their negative repercussions on young households' capability to enter the housing market will oppose it. As such, gaining a better understanding of the evolution of these legal measures deserves further analysis. In this respect in the EU context, recent discussions on the inclusion of borrower-based measures in the EU macroprudential framework as part of an expected future review of the EU regulations are particularly crucial (see ESRB, 2022b).

Understanding configurations leading to macroprudential response in the boom phase appears particularly important with the hindsight of COVID-19, which revealed two key patterns with regard to the conduct of macroprudential policy: First, the potential for easing policy during shocks depends on the buffers built during the expansion phase (Bergeant & Forbes, 2021). Second, the fact that most countries rapidly eased macroprudential policies (with the ones that had not tightened much in the boom potentially releasing core capital requirements) point to a potentially dangerous asymmetry in the conduct of macroprudential policy—with painful and slow tightening of policy followed by rapid unraveling of these actions in face of macroeconomic shocks, an issue which becomes all the more problematic as house prices did not stop rising in the context of the Covid pandemic (ESRB, 2022a).

As these trends continue to unfold, our findings have relevance for ongoing debates regarding macroprudential governance and the governance of public policies in the EU in general. Regarding the latter, there has been a longstanding debate over the advantages of “experimentalist governance” which enshrines local discretion to incorporate local knowledge and allows to avoid one-size fits all solutions (Zeitlin, 2016). Such a decentralized system of governance, based on joint supervision but local action, however, can lead to dynamics of “collective inaction” (Woll, 2014), if local governance set-ups are not conducive to action and mutual peer review is not binding enough. Our research clearly shows that in the case of countercyclical interventions in overheating European housing markets post-crisis, this might be the case. Whereas independent technocrats in central banks have had a decisive response function in several EU countries, in those countries where politicians are primarily involved in decisionmaking, we find little to no action, despite warnings from the center to the periphery. This finding, which also echoes the older debate over the advantages of “technocratic politics” driven by experts versus political decisionmaking (cf. Radaelli, 1999) calls for more careful design of the institutional set-up and the role of independent central banks.

However, our research also shows that the importance of political salience surrounding macroprudential policy, especially in the real estate sector and the important distributional implications of these regulations raise issues of democratic accountability from the delegation of ever more discretionary powers to central banks (Tucker, 2018). Should unelected technocrats be granted the sole say over who can access the market for private housing and under what conditions? In this context, better communication regarding financial stability risks and

policy decisions on the one hand, and institutional framework for information exchange and consensus building between technocratic and democratic institutions, such as Financial Stability Committees (Thiemann & Stellinga, 2022) on the other, appear all the more crucial.

A final aspect is the question of the salience of homeownership and its importance, where broader policy debates come into play, such as the taxation and subsidization of homeownership (Lepers, 2021), the development of functioning rental markets, and the expansion of social housing programs (Kholodilin et al., 2022), the latter two providing alternatives to private homeownership. Bohle and Seabrooke (2020, p. 413) point in this respect to “the subordination of housing policies to questions of financial market profitability and stability” which have “left unanswered the question of how to provide affordable housing independently of financial markets” with few governments having chosen decisive action on these latter fronts post-financial crisis. As our research suggests, however, without reducing the political salience of access to the housing market, for example, by providing affordable housing, even the countercyclical financial stability policies might be hard to implement. Future research should thus further investigate the interaction between these other domains of housing policy, political salience, and the capacity to conduct countercyclical macroprudential policy.

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Data availability statement

The Supporting Information to the paper provides detailed information on the data used. The raw data that support the findings of this study are available upon request from the corresponding author.

Endnotes

- ¹ Macroprudential policy, even in its countercyclical form does not have the goal to limit price increases per se or to address issues of house price affordability. If such trends do not endanger financial stability (e.g., not underpinned by excessive credit growth), macroprudential authorities strictly have no mandate to act, a fact also emphasized by practitioners (interview, Austrian Financial Stability Council, April 8, 2022).
- ² In addition, Piroška et al. (2020) link this greater activity to the creative use of these measures, e.g., for financial nationalism.
- ³ Young and Park find most notably that the extent of government intervention during the crisis rather than the macroeconomic damage yielded by the crisis is a determinant factor to explain post-crisis regulatory responses.
- ⁴ Being largely the outcome of path-dependent processes over centuries (Kholodilin et al., 2022; Kohl, 2018b), the set-up of the financing of real estate loans as well as their stratification effects were shown to be important to political dynamics surrounding housing (Ansell, 2019).
- ⁵ Additional analysis is performed later on further differentiating between the countries having experienced stronger/more extensive booms versus those whose booms started comparatively late and/or were rather less pronounced (s. Appendix D.1).
- ⁶ The ESRB (2019b; Cecchetti & Suarez, 2021) goes one step further than intensity by developing the concept of “macroprudential stance,” defined as the relationship between macroprudential policy actions (their intensity) and the objective

of financial stability. The macroprudential stance would be loose if there remains too much systemic risk once considering the already existing macroprudential policy response.

- ⁷ These tools are not available to a similar degree in all jurisdictions, with some jurisdictions having none of them at all (see Table A2 in the Appendix).
- ⁸ We verified that there is no negative correlation between the actions taken prior to 2014 related to any macroprudential tools and actions taken post-2014; which would bias our measurement as it would hold some countries as inactive when they actually did tighten macroprudential policy in the past.
- ⁹ QCA as an empirical approach is still treated with scepticism by some scholars (see Baumgartner & Thiem, 2017; Thiem et al., 2016 for a discussion). Ide and De Mello (2022) in their review of QCA analysis in international relations empirical work point to multi-method work, robustness checks, and data transparency as the three core avenues for improvement of QCA empirical work—this paper attempts to follow high standards on all of these three fronts.
- ¹⁰ The absence of a real estate crisis is a weaker and less intuitive condition than salience within the pathway. As shown later on in parsimonious solution and in a number of robustness checks, the no crisis condition drops from the solutions, which point to political salience being the core condition driving action in this group of countries.
- ¹¹ In 2019, an expert group proposed such measures (https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/161807/VM_2019_56_Selvitys_keinoista_ehkaista_kotitalouksien_liiallista_velkaantumista.pdf?sequence=1&isAllowed=y), but despite the project being carried by the government, industry and political opposition led to the removal of the proposed debt to income ratio measures in 2021 (IMF, 2022, p. 16).
- ¹² In its compliance report in 2021, the ESRB found these measures to have some effect (ESRB, 2021, p. 17). The Belgian government referred to these measures to justify its hesitancy in applying new measures and has not introduced any legally binding measures until now.

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