1.1 MACROPRUDENTIAL INSTRUMENTS AND THEIR ROLE IN ADDING RESILIENCE TO THE COVERED BOND MARKET

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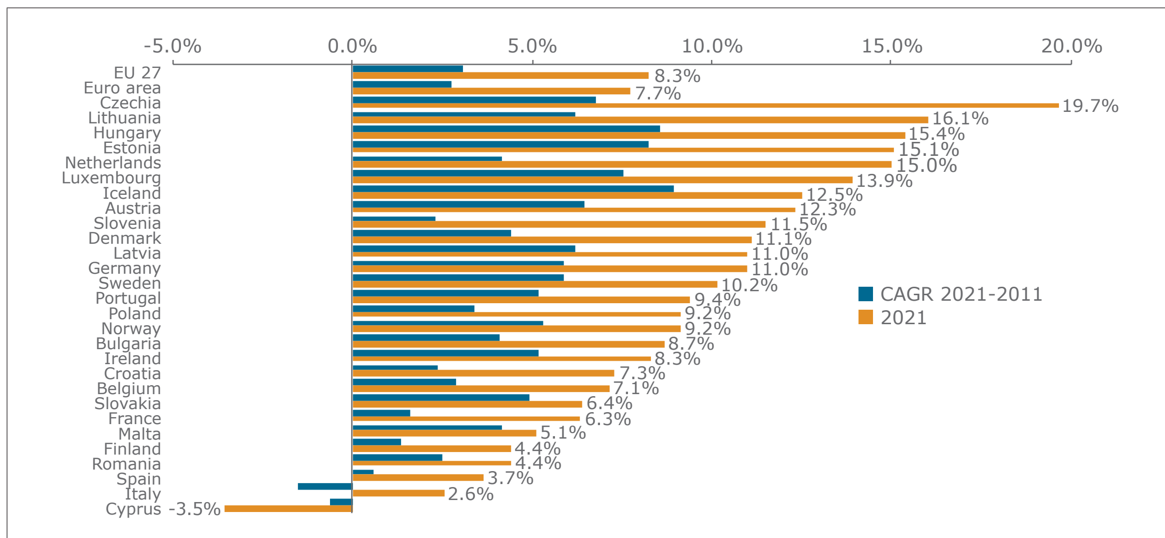
Residential real estate loans represent the most widely used cover pool asset in an international context. In recent years, most residential real estate markets in the EU have seen a steady upward trend. Even the Corona pandemic was unable to put a stop to these developments. Covered bond laws contain strict rules on the eligibility of mortgage loans that are allowed to be included in the cover pool. Besides this, numerous macroprudential instruments have been developed in recent years to manage the risks to financial stability that may arise from developments in the real estate market. The institutional framework differs from country to country and requires a differentiated approach based on the specifics of real estate financings. In the following, we describe the current developments in the real estate markets of the EU countries. Building on this, we present the basic macroprudential framework in the EU and take a closer look at recent macroprudential measures in individual jurisdictions.

TREND IN HOUSE PRICES AND MORTGAGE LOANS

The soaring trend in the European residential real estate (RRE) markets continued in 2021 when the pace of growth accelerated in almost all countries. Nominal house prices increased in the EU by 8.3% yoy in 2021 and by 10% in the fourth quarter versus a compound annual growth rate (CAGR) of 3.1% in the last ten years. The same occurred in the euro area, increasing by 7.7% in 2021 and by 9.4% in the fourth quarter, the fastest growth in 20 years. There are differences between countries: in some of them RRE prices have grown continuously throughout the decade, as in Germany where the historical peak of 12.2% yoy was reached in the last quarter of 2021, while in other countries the rise is more recent. In Italy house prices started recovering in the first quarter 2020 and the pace of growth remained moderate, by 4% yoy in the last quarter of 2021. Indeed, price growth accelerated and was more widespread with the pandemic, which triggered changes in housing preferences reflecting the search for larger spaces, fueled by a shift to home working. Along with increased demand, other drivers of the growth in property prices are low interest rates and supply-side constraints. Country-specific drivers are also important (i.e. incentives for energy-efficiency renovations). Moreover, amid higher inflation, flight-to-safety effects toward real estate assets are possible, effects that may be exacerbated by the war in Ukraine.

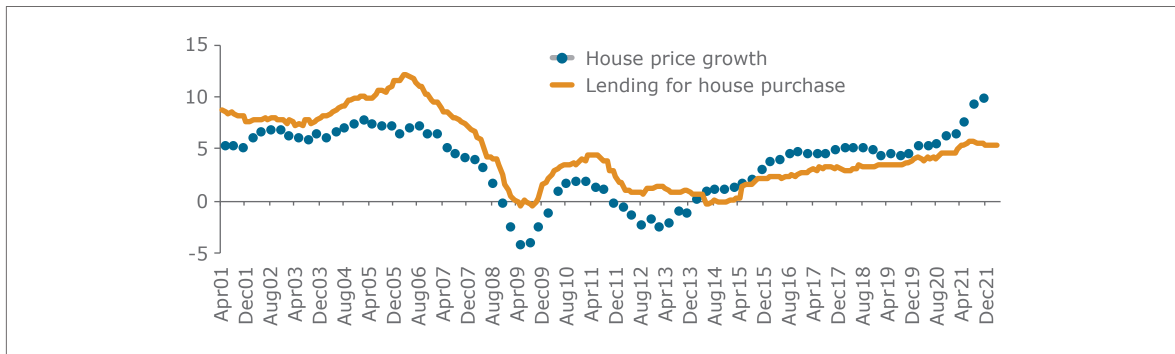
> Figure 1: In 2021 growth in residential real estate prices exceeded the pace recorded in the last decade



Source: Eurostat, Intesa Sanpaolo Research Calculations

The buoyant growth of residential real estate prices is coupled with robust mortgage lending. In the euro area in April 2022 growth in housing mortgages was equal to 5.3%, after an average rate of 5.5% in the previous 12 months and a peak of 5.8% in August 2021, thus showing a y-o-y slight slowdown. In several countries, the trend seems plateauing, following a long period of recovery. Indeed, according to the Bank Lending Survey, in the euro area in the initial months of 2022 banks slightly tightened credit access conditions for lending to households for house purchases.

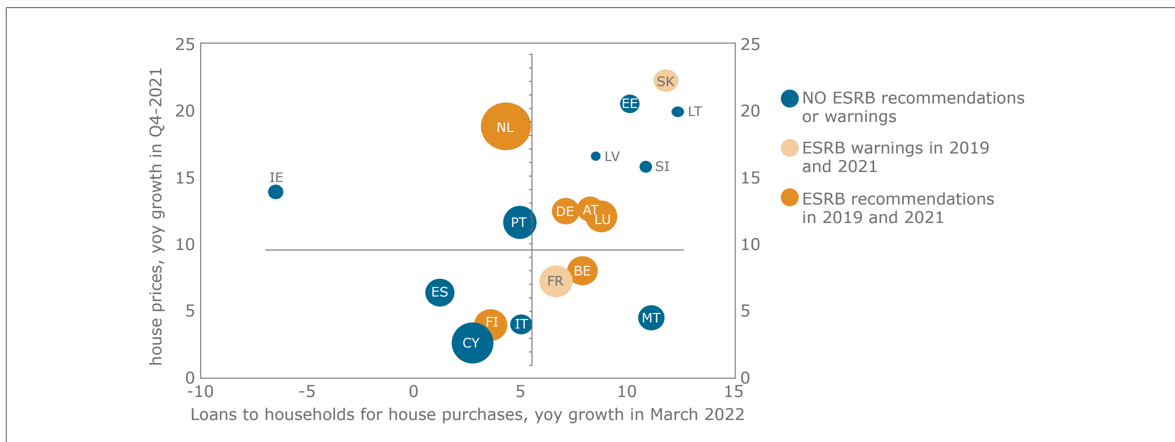
> Figure 2: The trend in the Euro area house prices is coupled with developments in mortgage loans (y-o-y % change)



Source: ECB, Intesa Sanpaolo Research

There is a clear positive correlation between house prices and mortgage loans, though patterns vary among countries. In some countries both house prices and housing loans are strongly increasing, while in other countries developments are muted. Overall, concerns of vulnerabilities in the residential real estate markets continued to build. However, as shown in figure 2, differently from pre-2008 crisis, in the last seven years, and more specifically in the post pandemic boom, the growth in mortgages has lagged the rise in RRE prices. As mentioned before, debt isn't the main driver of rising prices. Since the pandemic, the housing market has been driven to an important extent by replacement purchases. Existing homeowners tend to have the most equity and the lower LTV. This condition should limit the impact on financial stability of a rapid increase in real interest rates and the resulting house price corrections.

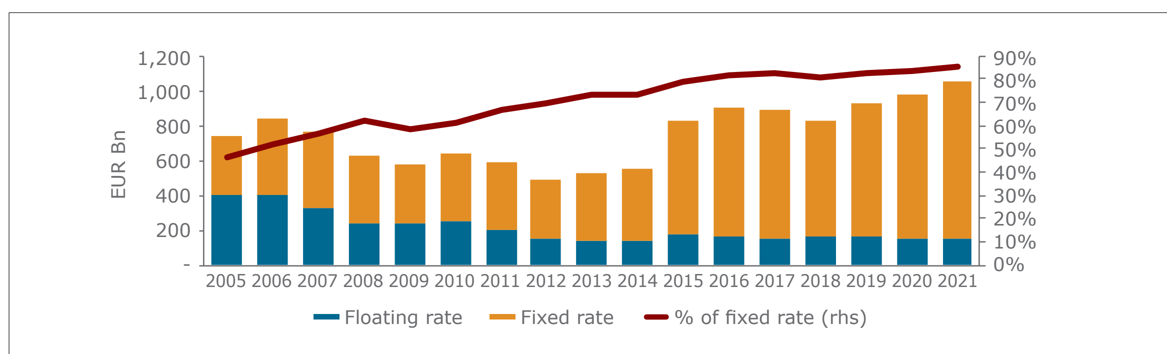
> Figure 3: The overall picture: RRE prices, mortgage loans, household indebtedness (the size of the bubbles) and ESRB's stance to macroprudential measures in selected countries.



Source: ECB, Intesa Sanpaolo Research

Another mitigating factor of possible adverse impacts of monetary policy normalization regards the structure of interest rates on new mortgage loans. In a scenario of weakening income positions and higher interest rates, households' debt servicing capacity could worsen, particularly in countries with elevated debt levels. However, the shift from floating to fixed-rate mortgages occurred over more than a decade will protect households from the increase in debt servicing needs related with higher reference rates. Indeed, as shown in figure 4, for the euro area, the share of fixed-rate mortgages over total new housing loans reached 85% in 2021, following a long period of very low interest rates and loan renegotiations, from 46% in 2005 when households used to direct their preferences towards floating-rate loans. From the covered bond market perspective, the higher share of fixed-rate housing loans is expected to mitigate any possible credit deterioration in mortgage loan cover pools.

> Figure 4: Breakdown of the flow of loans to households for house purchases between floating and fixed-rate loans (EUR Bn and % of fixed-rate over total)



Source: ECB, Intesa Sanpaolo Research

THE MACROPRUDENTIAL FRAMEWORK AT EUROPEAN LEVEL

The steady rise in real estate prices can endanger the stability of the financial system and give rise to systemic risks. To counter these risks, national supervisory bodies as well as legislators have the possibility to decide on and activate the use of macroprudential instruments. In this sense, macroprudential instruments are measures designed to maintain a stable financial system.

Many macroprudential instruments and related institutions have been created in response to the financial crisis. In order to establish harmonized but decentralized macroprudential supervision, national, European and international responsibilities intertwine closely. On the one hand, macroprudential instruments have been directly incorporated into the regulatory framework for the first time with the Capital Requirements Directive (CRD) and Capital Requirements Regulation (CRR) and thus harmonized specifications were made for implementation in national law. On the other hand, macroprudential policy and the associated toolbox are fundamentally the responsibility of the national authorities responsible for macroprudential supervision.

At the European level, the European Systemic Risk Board (ESRB) has been responsible for macroprudential supervision of the EU financial system since 2011. In addition to members from a wide range of European institutions (ECB, EU Commission, EBA, ESMA, EIOPA, EFC), it is composed of representatives of the national macroprudential authorities of the individual EEA member states. The central decision-making body is the ESRB's General Board, chaired by ECB President Lagarde. If serious risks or imbalances are identified in the European financial system, the ESRB can issue warnings or recommendations to the EU, EU member states or European and national supervisory authorities. The communication is either confidential or public. Recommendations include concrete actions to mitigate identified risks or imbalances. These are not legally binding. However, the rejection of recommended measures must be adequately justified. If the recommendations are

adopted, the ESRB monitors their implementation and also has the right to issue an opinion on the measures under consideration.

In the course of the Single Supervisory Mechanism (SSM) Regulation, the ECB has also been given macroprudential powers since November 2014. As part of this, it is responsible for assessing the macroprudential measures adopted by the national authorities. If necessary, it can demand the tightening of the corresponding instruments.

With regard to the variety of macroprudential instruments, there is a wide range of possible interventions. In its regular reports on the various national measures, the ESRB makes a fundamental distinction between "capital based measures" and "borrower based measures". Instruments that do not fall into either category are classified as "other measures".

In this context, "capital based measures" target the entire banking system and are intended to combat structural risks by applying additional capital buffers. For example, the Capital Conservation Buffer (CCoB), which currently stands at 2.5% for all member states, is intended to improve the overall loss absorption capacity of the banking system. The Countercyclical Capital Buffer (CCyB) can help to dampen excessive credit growth in upswings and thus prevent the economy from overheating. In the event of a downturn, a dissolution of the CCyB can in turn counteract a crisis-induced restriction in the supply of credit. The Global Systemically Important Institution Buffer (G-SII Buffer) and the Other Systemically Important Institution Buffer (OSII Buffer) are designed to mitigate risks arising, among other things, from excessive interconnections between individual banks. The systemic risk buffer is intended to counter systemic risks and can apply to specific groups of institutions or the entire banking system. Sector-specific buffers that address specific risk positions are also possible.

"Borrower based measures", on the other hand, refer to the specific financing and aim to smooth the credit cycle. Within this framework, excessive lending can be counteracted. On the other hand, structural credit features can be influenced in order to curb risks for the national economy, which arise, for example, from excessive debt or from sharply rising property prices. In general, they refer to residential mortgage loans.

In principle, both individual measures and a combination of several measures can be applied. This strongly depends on the country specifics and the assessment of the current situation on the part of the respective "decision makers". At this point it is important to mention that decisions can be made in very different ways. On the one hand, it plays a role which bodies have the decision-making authority. This can differ considerably from country to country and varies from only one authority to a combination of several authorities. In addition to the national central banks, some countries also have committees within or outside the central banks. Furthermore, in some countries the decision on possible measures is also placed in the hands of the supervisory authority, which acts independently of the central bank. In addition, the influence of political bodies is possible, whereby the Ministry of Finance of the respective country usually plays the main role here. On the other hand, the nature of the influence also varies significantly. The possibilities for the responsible bodies to exert influence range from the right to make proposals (soft power) to the power to issue instructions (hard power). The responsible bodies as well as their powers thus have a decisive influence on the choice of measures as well as their implementation, so that an assessment of macroprudential measures can only take place at the national level. There is therefore unlikely to be a "patent remedy".

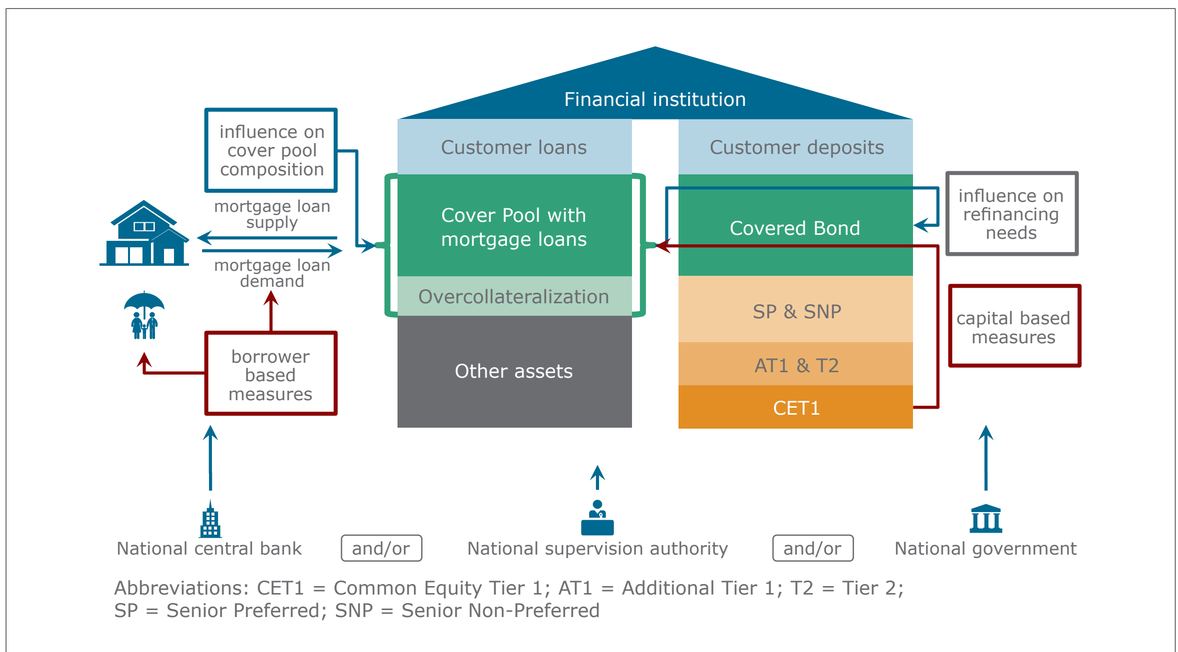
> Figure 5: Overview of macroprudential measures

Macroprudential measures	Examples
Capital based measures	> Capital Conservation Buffer (CCoB) > Countercyclical Capital Buffer (CCyB) > G-SII Buffer > O-SII Buffer > Systemic Risk Buffer (SRB)
Borrower based measures	> Debt Service to Income (DSTI) > Loan-to-income (LTI) > Loan-to-value (LTV) > Debt-to-Income (DTI) > Loan Term > Loan Amortization > Stress / Sensitivity Test
Other measures	> Leverage ratio > Liquidity ratio > Loan-to-Deposit > Risk Weights

Source: ESRB, LBBW Research

In the covered bond context, the use of macroprudential instruments can influence both issuance activity and the composition of the cover pool. Thus, the requirement for additional capital buffers can in principle lead to lower lending. Stricter credit guidelines, on the other hand, can put the brakes on demand for mortgage loans. On the other hand, instruments such as LTV or LTI caps as well as maturity restrictions on loans can lead to an improvement in credit quality in the cover pool or a reduction in ALM risks. On the issuer side, capital based measures in particular can contribute to a higher resistance to crises and thus to a lower probability of default, which in the overall context is reflected positively in the covered bond assessment.

> Figure 6: Covered bonds in the context of macroprudential measures



Source: LBBW Research

CURRENT DEVELOPMENTS AND RECENT MACROPRUDENTIAL MEASURES

In the last five years, the ESRB has taken extensive action twice. Accordingly, five warnings and six recommendations have been issued to eleven member states in June 2019. A corresponding public communication on this took place in September 2019. Czechia, Germany, France, Iceland and Norway were affected by the warnings. Belgium, Denmark, Luxembourg, the Netherlands, Finland and Sweden have received concrete recommendations. Two years later, the ESRB came back with a follow-up. Five warnings and two recommendations were sent out in December 2021 and subsequently communicated in February 2022. Bulgaria, Croatia, Hungary, Liechtenstein and Slovakia are new countries with warnings. In addition, Austria and Germany have received concrete recommendations for measures.

The risk factors identified by the ESRB are diverse and range from accelerating house price growth and increasing overvaluations to sharp increases in lending and, in some cases, associated loosening of lending standards. Further risks from the real estate market can arise due to high household indebtedness or high shares of interest only loans. In this context, the risk factors occur in varying degrees depending on the country or may only apply to limited regions, such as metropolitan areas. In some cases, the ESRB also points to insufficient data, which makes it difficult, for example, to obtain information on the development of lending standards that is important for risk analysis.

Of the 17 countries that received either a warning or a specific recommendation, the ESRB sees high risks from real estate market developments in five countries. This applies in particular to countries in the Nordics and the BeNeLux region. A medium risk is seen for all other countries. The most frequent risk is existing or increasing overvaluation tendencies (in 88% of the countries). These are often accompanied by continued strong house price growth (82%) and strong and sustained credit growth (76%). In more than half of all countries, the dangers of high household indebtedness (65%) and easing of lending standards (59%) are also mentioned. In the Nordics in particular, the ESRB also highlights the strong interconnectedness between the banking markets, which is reflected in cross-border financing and a generally high importance of residential real estate financing in these countries.

> Figure 7: ESRB Risk Assessment and Key Vulnerabilites on different EEA residential real estate markets

Country	ESRB		Key Vulnerabilities						
	Warning/ Recommendation	Risk Assess-ment	House Price Growth	Over-valuation	Housing Lending Growth	Deteriorating Lending Standards	High Household Indebted-ness	Intercon-nectedness of Banking Systems	High Share of Interest Only Loans
Austria	Recommendation	Medium	✓	✓	✓	✓			
Belgium	Recommendation	Medium	✓	✓	✓	✓	✓		
Bulgaria	Warning	Medium	✓	✓	✓				
Croatia	Warning	Medium	✓	✓	✓	✓			
Czechia	Warning	Medium	✓	✓	✓	✓			
Denmark	Recommendation	High	✓	✓			✓	✓	✓
Finland	Recommendation	Medium			✓	✓	✓	✓	
France	Warning	Medium		✓	✓	✓	✓		
Germany	Recommendation	Medium	✓	✓		✓			
Hungary	Warning	Medium	✓	✓	✓		✓		
Iceland	Warning	Medium	✓	✓	✓	✓	✓		
Liechtenstein	Warning	Medium					✓		
Luxembourg	Recommendation	High	✓	✓	✓	✓	✓		
Netherlands	Recommendation	High	✓	✓		✓	✓		
Norway	Warning	High	✓	✓	✓				
Slovakia	Warning	Medium	✓	✓	✓		✓		
Sweden	Recommendation	High	✓	✓	✓		✓	✓	✓

Source: ESRB "Vulnerabilities in the residential real estate sectors of the EEA countries", LBBW Research

The work of the Basel Committee on Banking Supervision and the macroprudential policies of the ESRB and the ECB, among others, are believed to have led to the introduction of numerous macroprudential instruments at the country level in recent years. In particular, the additional capital buffers contributed to the banking systems in most member states proving to be much more robust and resilient compared to the financial crisis in 2008. During the height of the Covid 19 pandemic, the ECB allowed a wide variety of relief, for example with regard to the Pillar-2-Guidance (P2G), the capital conservation buffer and the leverage ratio. As the pandemic became more manageable and the economic outlook for credit institutions improved, it was decided at the beginning of this year to phase out the temporary relief. In the context of this, macroprudential measures also moved back into the focus of politics. In December 2021, the EU Commission launched a consultation on the appropriateness of the current macroprudential rules in the CRR and CRD to mitigate financial stability risks. The experiences from the use of capital buffers in the environment of the Covid 19 crisis should also be taken into account. In March 2022, the ESRB also published a concept paper proposing to introduce borrower-related measures into EU legislation based on a common minimum catalogue.

In the light of still rising property prices, additional capital buffers were reactivated or introduced for the first time at national level in the recent past. For example, in Croatia, Denmark, Estonia, France, Germany, Iceland, the Netherlands, Romania and Sweden, additional countercyclical capital buffers are planned (again) during 2022 and the beginning of 2023 (For more details see comments in figure 8). Other states, in turn, are going to increase their already existing CCyB. With regard to specific Systemic Risk Buffers, Germany and Lithuania will join the existing jurisdictions in the future. Accordingly, the Federal Financial Supervisory Authority (BaFin) published a general ruling at the end of March 2022, according to which German credit institutions will have to comply with a sectoral systemic risk buffer of 2.0% for their residential real estate financing. The target is to be implemented together with the CCyB (0.75%) from February 2023. Previously, in November 2021, the Lithuanian central bank had already decided to introduce a sectoral systemic risk buffer for residential real estate financing – also in the amount of 2.0%. This is to be applied from 1 July 2022.

With regard to borrower based instruments, for example, the Austrian supervisory authorities provide for a mandatory introduction of an LTV limit (90%), a debt service to income limit (maximum 40%) and a maximum loan term (35 years) for newly granted loans. The corresponding measures are to be applied from the second half of 2022. The borrower based measures that have applied in Austria so far were merely a recommendation to the credit institutions. New mandatory borrower based measures can also be observed in Czechia. Here, too, the corresponding instruments were previously based on recommendations, which were also partially suspended during the Covid 19 pandemic. The Czech central bank has had the power to set binding LTV, DTI and DSTI limits since August 2021. It exercised this right for the first time in November 2021. Thus, with effect from 1 April 2022, a DTI limit of 8.5 (9.5 for borrowers under 36) a DSTI limit of 45% (50% for borrowers under 36) and a LTV limit of 80% (90% for borrowers under 36) will apply to newly originated mortgage loans. The previous recommendations that are not covered by the new provisions (e.g. maximum loan term of 30 years, stress tests) are to continue to apply. Another recent example is France. Here, the French Financial Stability Council (Haut Conseil de Stabilité Financière) has also moved to cast previous recommendations regarding the maximum debt service to income ratio DSTI (35%) as well as the maximum loan term (25 years) into binding specifications with effect from 1 January 2022.

An analysis of the macroprudential instruments active in the member states shows that many countries already have borrower based measures in place. LTV limits are used most frequently, with a share of 81%. This is followed by requirements for debt service to income limits (52%) and maximum loan terms (44%). In Germany, too, there has been a legal basis for the enactment of borrower based measures since 2017. However, the possible instruments (LTV limit, amortization requirement) have not yet been activated by the BaFin.

> Figure 8: Selected borrower based and capital based measures in different countries

Country	Borrower based measures							Capital based measures	
	DSTI	LTI	LTV	DTI	Loan Term	Loan Amortiza-tion	Stress/ Sensitivity Test	CCyB	SRB
Austria	✓		✓		✓				✓
Belgium			✓						
Bulgaria							✓	✓	✓
Croatia								✓*	✓
Cyprus	✓		✓				✓		
Czechia	✓		✓	✓	✓	✓	✓	✓	
Denmark		✓	✓					✓*	
Estonia	✓		✓		✓			✓*	
Finland			✓				✓		
France	✓				✓			✓*	
Germany								✓*	✓**
Hungary	✓		✓						
Iceland	✓		✓					✓*	✓
Ireland			✓				✓		
Latvia	✓	✓	✓	✓	✓				
Liechtenstein			✓			✓			✓
Lithuania	✓		✓		✓				✓**
Luxembourg			✓					✓	
Malta					✓				
Netherlands			✓					✓*	
Norway			✓	✓		✓	✓	✓	✓
Poland	✓		✓		✓				
Portugal	✓		✓		✓				
Romania	✓		✓		✓			✓*	✓
Slovakia	✓		✓	✓	✓	✓		✓	
Slovenia	✓		✓		✓	✓			
Sweden			✓					✓*	✓

Source: ESRB, national authorities, LBBW Research – * Croatia (03/2023 0.5%), Denmark (09/2022 1.0%), Estonia (12/2022 1.0%), France (04/2023 0.5%), Germany (02/2023 0.75%), Iceland (09/2022 2.0%), Netherlands (05/2023 1.0%), Romania (10/2022 0.5%), Sweden (09/ 2022 1.0%)

CONCLUSION

In the context of the ongoing normalization on monetary policy, interest rate hikes will possibly dampen the run in RRE market, while on the other side it could worsen borrowers' ability to pay and impair the value of cover pool assets such as mortgage loans. In this sense, macroprudential measures, especially borrower based tools contribute to higher resilience in the covered bond market. Indeed, macroprudential initiative put in place in 2019 and 2021 mainly addressed countries with a higher household indebtedness, combined with accelerating house prices and strong increase in housing loans. Nevertheless, it is challenging to choose the right time to use macroprudential tools. The complexity of the mortgage finance market also makes it difficult to verify the impact of the use of macroprudential measures. Finally, apart from supply and demand, a wide variety of other factors affect the development of real estate markets and prices, such as energy and regulatory requirements and rising material costs.