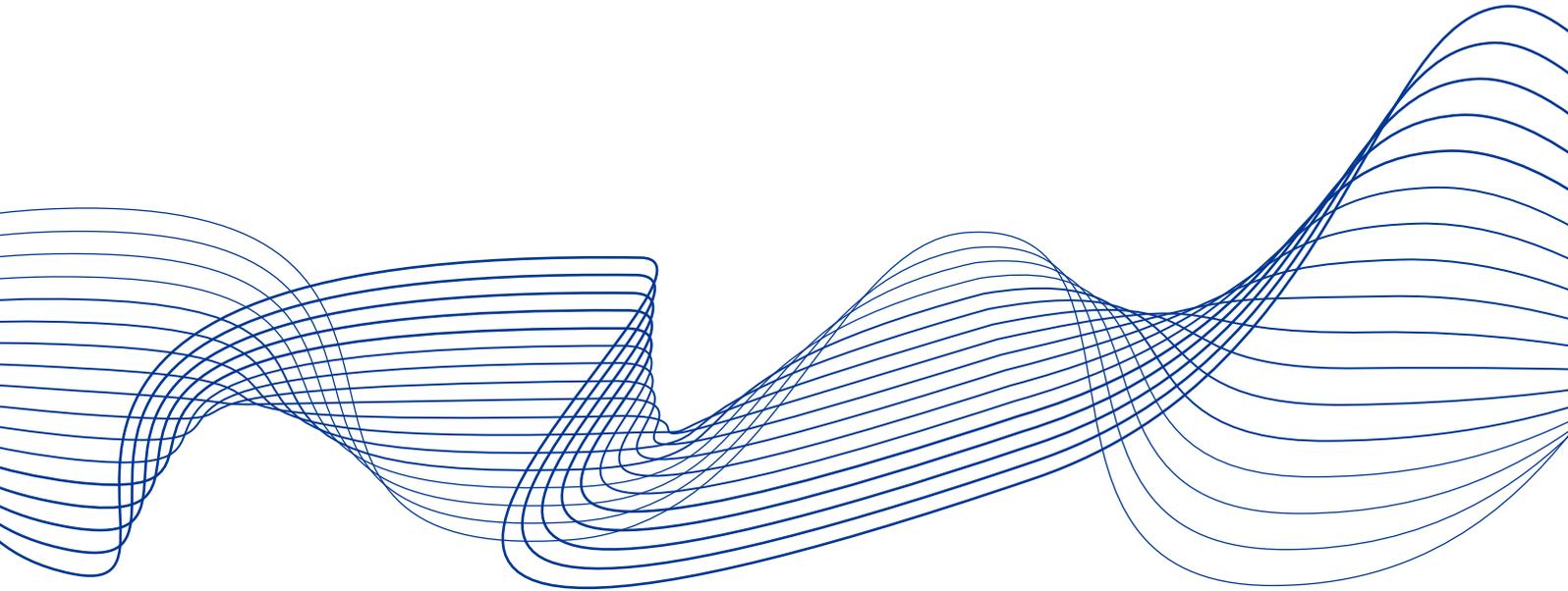


**Vulnerabilities in the
residential real estate
sectors of the EEA
countries**

February 2022



ESRB
European Systemic Risk Board
European System of Financial Supervision

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Executive summary

Housing is a key sector in the real economy and represents a major part of household wealth and bank assets. Given the importance of the residential real estate (RRE) sector to financial and macroeconomic stability, the ESRB, alongside national macroprudential authorities and the European Central Bank (ECB), has a responsibility to contribute to preventing the build-up of RRE vulnerabilities across Europe. At the EU level, the ESRB has a mandate to “[...] contribute to ensuring financial stability and mitigating the negative impacts on the internal market and the real economy”.¹ To this end, the ESRB can issue warnings if it needs to flag vulnerabilities and trends that have the potential to disrupt financial stability. The ESRB can also go one step further and issue recommendations, which not only flag financial stability risks but also point to necessary remedial actions. Similar mandates are given to national macroprudential authorities across EU Member States.

The ESRB has been active in assessing vulnerabilities related to the EU real estate sector and, after issuing a first set of warnings in 2016, it then issued a set of country-specific recommendations in 2019, along with further warnings on medium-term vulnerabilities in the RRE sector.² In 2019, Belgium, Denmark, Luxembourg, the Netherlands, Finland and Sweden received ESRB recommendations³ on the back of a combination of country-specific vulnerabilities, related primarily to the level of household indebtedness or the growth of mortgage credit, coupled with concerns about lending standards and the ability of households to withstand negative economic shocks. Moreover, some of these countries were exhibiting strong house price growth or an overvaluation of residential real estate. These vulnerabilities were identified as presenting financial stability risks of varying nature across different countries, and a compliance report was produced by the assessment team that had been created as a result.⁴ In addition, in 2019 the ESRB issued country-specific warnings on medium-term vulnerabilities in the real estate sector to the Czech Republic, Germany, France, Iceland and Norway.⁵

This report summarises the ESRB assessment concluded in 2021. The ESRB analysed the main trends for various indicators of RRE vulnerabilities across the European Economic Area (EEA; the EU27 as well as Iceland, Liechtenstein and Norway) and the respective macroprudential policy action that these countries have taken to mitigate the resulting financial stability risks. The analysis has been particularly difficult at the current stage owing to the impact of the coronavirus (COVID-19) pandemic. Notwithstanding the resilience of the RRE sector so far, the longer-term adverse effects of the COVID-19 shock on property markets are

¹ Recital 10, **Regulation (EU) No 1092/2010 of the European Parliament and of the Council of 24 November 2010 on European Union macro-prudential oversight of the financial system and establishing a European Systemic Risk Board** (OJ L 331, 15.12.2010, p.1).

² In addition, the ESRB published two reports entitled “**Vulnerabilities in the residential real estate sectors of the EEA countries**” and “**Methodologies for the assessment of real estate vulnerabilities and macroprudential policies: residential real estate**”, both published in September 2019.

³ Belgium (**Recommendation ESRB/2019/4**); Denmark (**Recommendation ESRB/2019/5**); Luxembourg (**Recommendation ESRB/2019/6**); the Netherlands (**Recommendation ESRB/2019/7**); Finland (**Recommendation ESRB/2019/8**); Sweden (**Recommendation ESRB/2019/9**).

⁴ **Summary compliance report, March 2021**.

⁵ Czech Republic (**Warning ESRB/2019/10**); Germany (**Warning ESRB/2019/11**); France (**Warning ESRB/2019/12**); Iceland (**Warning ESRB/2019/13**); Norway (**Warning ESRB/2019/14**).



highly uncertain and will largely depend on the duration of the shock and the timing of the termination of support measures. Box 1, entitled “Effects of the COVID-19 pandemic on residential real estate markets”, provides more details on the implications of the pandemic for RRE markets. In the case of the 24 countries for which the identified vulnerabilities were more pronounced, the ESRB conducted a country analysis, taking into account the interaction between vulnerabilities, plus some additional information. For these countries, the ESRB also assessed the policies that affect the vulnerabilities.

The analysis shows that, in most of the countries receiving ESRB recommendations or warnings in 2019, the vulnerabilities have grown, which is also the case of most of the other EEA economies.⁶ House prices continued to increase in most cases, resulting in greater overvaluation. Moreover, the risks related to household indebtedness remained unchanged or even increased in several countries. This was partly due to mortgage credit growth, which continued to increase robustly in most countries. Structural factors have contributed in many countries to the vulnerabilities in the real estate sector.

Beyond macroprudential policy considerations, broad reforms in housing and other public policy areas are required to remediate the mismatch between the supply of and demand for housing in certain countries. In addition, rental markets are not sufficiently developed in some countries. More effort should be made to identify measures which could remediate these shortcomings. Structural and other factors leading to imbalances should be addressed by policies directly affecting the imbalances. Macroprudential policies are in place to build resilience and not to address structural factors directly.

The ESRB concluded that, in the five countries which received ESRB recommendations or warnings in 2019 (Denmark, Luxembourg, the Netherlands, Sweden and Norway), the vulnerabilities related to RRE markets remained high, while in six countries (Belgium, Czech Republic, Germany, France, Finland and Iceland) the vulnerabilities were assessed as medium. Of the rest of the EEA countries, thirteen countries (Bulgaria, Estonia, Ireland, Croatia, Lithuania, Hungary, Malta, Austria, Poland, Portugal, Slovenia, Slovakia and Liechtenstein) were identified as having medium vulnerabilities based on the analysis.

A range of macroprudential measures had been activated before the COVID-19 pandemic to address these vulnerabilities. However, some measures have been discontinued to mitigate the pandemic-related consequences for households and banks. Many EEA countries already had some form of borrower-based measures in place, except for Bulgaria, Germany, Spain, Italy and Luxembourg. In 2020, some of these measures were relaxed or discontinued after the onset of the pandemic (Czech Republic, Finland, Malta, Portugal, Sweden and Norway). Capital-based measures such as risk weight requirements or floors for RRE exposures had been in place in about half of the countries. A positive countercyclical capital buffer (CCyB) or systemic risk buffer (SyRB) was present in all countries except Greece, Spain, Italy, Cyprus, Latvia, Malta, Portugal and Slovenia⁷ before the crisis, while in most countries the CCyB has been fully or partially discontinued owing to the pandemic.

⁶ This is consistent with the analysis of the [ECB Financial Stability Review](#), November 2021.

⁷ However, the CCyB or the SRB were not necessarily calibrated to address RRE vulnerabilities.



Financial stability risks related to residential real estate have continued to increase in the context of the macroeconomic risks associated with the pandemic as well as the continuation of strong housing market dynamics and household indebtedness.

The pandemic has led to a sharp decrease in economic activity and uncertainties regarding the outlook, with an unequal economic impact across household income groups so far.⁸ Interest rates on new loans are decreasing, leading to a surge in demand for residential real estate, accompanied by increasing house prices and mortgage loan volumes. In the medium term, the impact of the pandemic and low interest rates is expected to increase vulnerabilities related to household income and debt servicing capacity, and overall debt levels.

In the initial phases of the pandemic, the lack of activation of macroprudential measures or even their reversal was understandable in the broad policy context of mitigating the impact of the pandemic, and economic uncertainty. In addition to important fiscal and monetary support measures, micro- and macroprudential authorities lowered capital requirements and softened other requirements in response to the crisis to enable credit intermediation to the real economy. Given the difficulty in assessing the situation in the context of the pandemic-related economic downturn, the interpretation of the risk indicators in this report has been adjusted accordingly.

As house prices and mortgages have continued to increase strongly in a number of countries, however, national authorities should once again start considering the (re-)introduction or tightening of macroprudential measures. The overall improvement in the economic situation allows for an adjustment of macroprudential policy, even though the stage countries are at in the RRE cycle and the impact of the withdrawal of support measures on RRE markets should be considered carefully. Taking into account potentially differing economic and financial cycles in the aftermath of the pandemic, authorities should consider acting by implementing macroprudential measures that will prevent vulnerabilities related to the RRE markets from increasing, while aiming to avoid procyclical effects on the real economy and other segments of the financial sector (in particular, by taking into consideration the potential lagged impact of the pandemic on the banking sector). In the near term, it is particularly important for all countries that banks make adequate provision for expected losses. It may be necessary to revisit the discussion on adjusting existing borrower-based measures or activating new ones, and on adjusting existing capital-based measures or activating new ones to rebuild capital buffers.

Taking all these factors into account, the ESRB policy assessment concluded that, in five countries (Belgium, Czech Republic, France, Iceland and Norway) which received ESRB recommendations or warnings in 2019, the policy was assessed as appropriate and sufficient to mitigate the vulnerabilities identified in this analysis. In two countries (the Netherlands and Sweden) the policy was assessed as appropriate but only partially sufficient and in four countries (Denmark, Germany, Luxembourg and Finland) the policy was assessed as partially appropriate and partially sufficient. Of the remaining EEA countries, in seven countries (Estonia, Ireland, Lithuania, Malta, Poland, Portugal, Slovenia) policy was assessed as appropriate and sufficient, in one country (Slovakia) policy was identified as appropriate and partially sufficient, while in five countries (Austria, Bulgaria, Croatia, Hungary, Liechtenstein) it was assessed as only

⁸ See, for example, European Central Bank (2021), “COVID-19 and income inequality in the euro area”, *Economic Bulletin*, Issue 2.



partially appropriate and partially sufficient. The second compliance assessment of those countries which received recommendations in 2019 will be published at around the same time as this report.

As a result of the assessment, in December 2021 the ESRB decided to issue two recommendations (Germany and Austria) and five warnings (Bulgaria, Croatia, Hungary, Slovakia and Liechtenstein) to countries in which the policy was assessed as not fully sufficient to mitigate the identified vulnerabilities, and it made a number of suggestions for all countries regarding macroprudential measures to be considered by the authorities.⁹ In particular, the ESRB pointed out that a number of countries should either introduce additional borrower-based measures or tighten those already in place, in order to mitigate existing vulnerabilities more effectively or prevent the build-up of new ones. Countries with accumulated vulnerabilities should also ensure capital preservation until any potential risks have materialised or should consider (re-)introducing capital-based measures whenever the economic recovery is on solid ground. Taking into account the economic uncertainty around the ongoing recovery from the pandemic, including global uncertainty related to energy prices and supply bottlenecks which are making the recovery fragile, any policy action should be carefully assessed, to ensure it contributes to mitigating RRE vulnerabilities but aims to avoid procyclical effects on the overall performance of the real economy and the financial system. At the same time, all countries should ensure there is adequate loan provisioning. Finally, the analysis takes note that, in some countries in which the identified systemic risk levels remain high, intervention in other policy areas may be required to complement macroprudential policy so that such risks can be lowered efficiently.

This report is organised as follows. Chapter 1 presents the overall trends in RRE markets. Chapter 2 analyses the cross-country risks, covering the collateral, funding and household stretches, and structural factors that affect housing and mortgage markets. Chapter 3 examines the interaction between vulnerabilities for a selected set of countries, followed by a country-specific analysis of risks and policies. Chapter 4 provides policy conclusions. The report includes a number of boxes focusing on the effects of the pandemic, house price overvaluation measures, public policies related to housing and mortgage markets, financial wealth and an assessment of the macroprudential stance.

⁹ Note that while it is not necessary for a recommendation to be preceded by a warning, the three countries receiving recommendations received warnings in either 2016 or 2019.



1 Residential real estate markets: overall trends

Following the onset of the COVID-19 pandemic, economic activity declined significantly in the EU, before recovering in most countries. Policymakers responded promptly and forcefully to the threats posed by COVID-19 through fiscal, monetary and prudential policies which have partly mitigated the adverse effects of the pandemic. Nonetheless, GDP plummeted across all EU countries, particularly in the second quarter of 2020 (Figure 1, panel a), although with some degree of heterogeneity, mainly reflecting the following factors: (i) differences in infection and fatality rates, as well as the intensity with which governments enacted restrictions¹⁰; (ii) differences in the exposure of each economy to those sectors that are most vulnerable to virus-induced restrictions (e.g. the food and accommodation sector). Since the early months of 2021 the economic outlook for the EU has significantly improved, as shown by the different rounds of European Commission forecasts, which have brought forward the date on which EU GDP would be back at its pre-crisis levels (Figure 1, panel b). The more benign economic outlook is the result of the vaccination campaign roll-out as well as the expected positive impact of the implementation of the NextGenerationEU¹¹. Discretionary policy measures adopted by EU Member States have successfully mitigated the impact of the pandemic on disposable incomes which have continued to grow, albeit only slightly, mainly as a result of higher net social transfers (Figure 2). At the same time, at least for the moment, they are also playing a role in preventing a surge in corporate insolvencies, which would translate into substantially higher unemployment (6.8% in August 2021, up only slightly from 6.4% in March 2020).

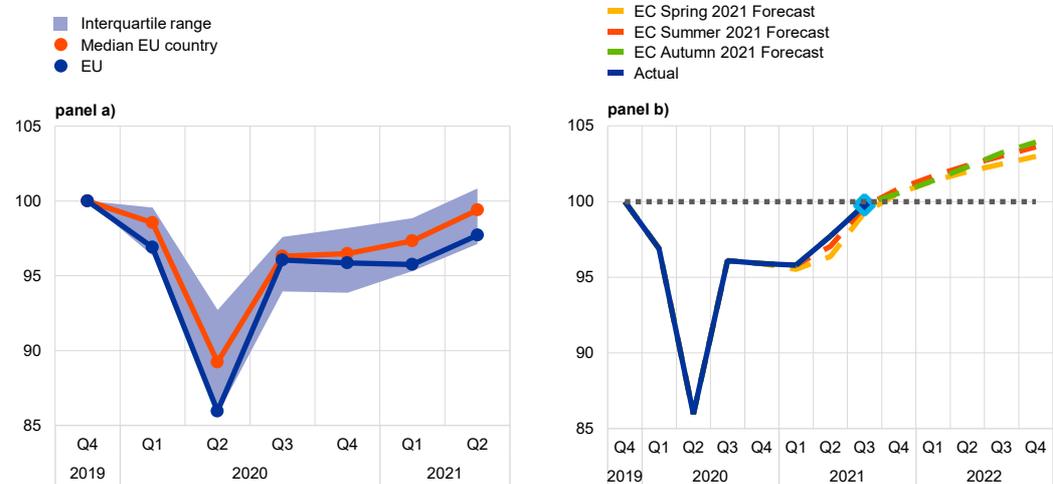
¹⁰ See König, M. and Winkler, A. (2021), “COVID-19: Lockdowns, Fatality Rates and GDP Growth”, *Intereconomics*, No 56, pp. 32-39.

¹¹ See the [Recovery plan for Europe](#).



Figure 1
Real GDP evolution (panel a) and European Commission forecasts (panel b)

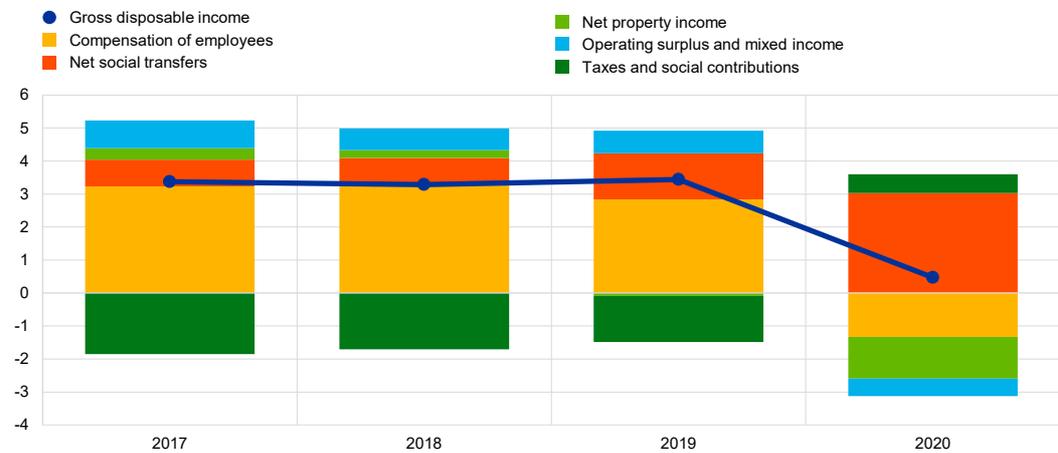
(index: Q4 2019 = 100)



Sources: ECB and European Commission.

Figure 2
Disposable income growth and contributing factors

(year-on-year percentage changes)



Source: Eurostat.

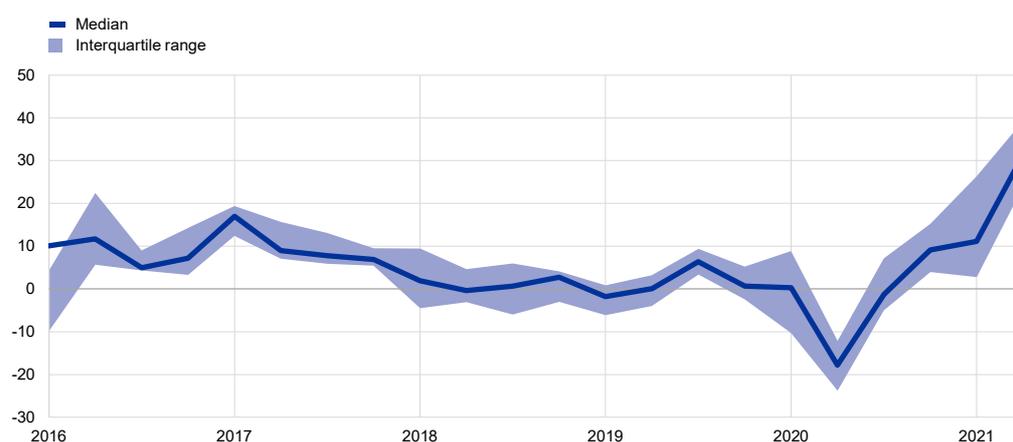
Notwithstanding the decline in GDP induced by the pandemic and decelerating disposable income growth, house prices and mortgage credit have decoupled from the rest of the economy and are still accelerating in the EU. While the number of residential transactions declined sharply in the second quarter of 2020, reflecting macroeconomic uncertainty and the fact that it was impossible to carry out personal property inspections, in most countries they rebounded markedly in the second half of the year (Figure 3), partly driven by pent-up demand and less severe



lockdowns. Several factors have underpinned the resilience of the RRE sector. Most notably, stimulus packages have kept a floor under disposable income growth and resulted in borrowing costs at near record lows. For example, the euro area and Česká národní banka lending surveys suggest that the low level of interest rates was the key driver of household demand for mortgage loans in 2020, as well as in the first quarter of 2021. Similarly, loan moratoria have supported the debt servicing capacity of the most vulnerable households. Moreover, the net financial assets of households have continued to rise during the pandemic, as a result of both forced savings and rising asset prices (see Box 3 entitled “Financial wealth in the EU”). Finally, while some investors may see RRE assets as a safe haven in times of high uncertainty, thus contributing to the increasing demand for residential properties, others (including cross-border investors) may be looking for yields in alternative investments, including residential real estate, in the low interest rate environment.

Figure 3
Residential real estate transactions

(year-on-year percentage changes)



Note: The last data point is the second quarter of 2021.
Source: Eurostat.

Robust RRE lending and price growth have increased already-high household indebtedness and the risk of a reversal in house prices.

As a result of the decoupling of the economic cycle from the RRE cycle, the wedge between house price growth and household disposable income growth has widened, driving up estimates of overvaluation in the EU RRE market (Figure 4, panel a). In addition, house prices in the EU as a whole have surpassed the peak reached before the global financial crisis (Figure 4, panel b). While demand for housing has remained robust, housing supply fell in 2020, with the number of building permits and the amount of residential investment declining by 8.5% and 4.7% respectively, compared with 2019. Tighter housing supply could put house prices under further pressure in the short term. Even though house price growth has accelerated, particularly in the second half of 2020, rental price growth has declined in many EU countries, pushing up price-to-rent ratios (Figure 5). The slowdown in rental price growth reflects two factors which are partly linked to each other: (i) a sharp drop in immigration and tourism and (ii) an increase in the supply of properties available for long-term rental, as properties

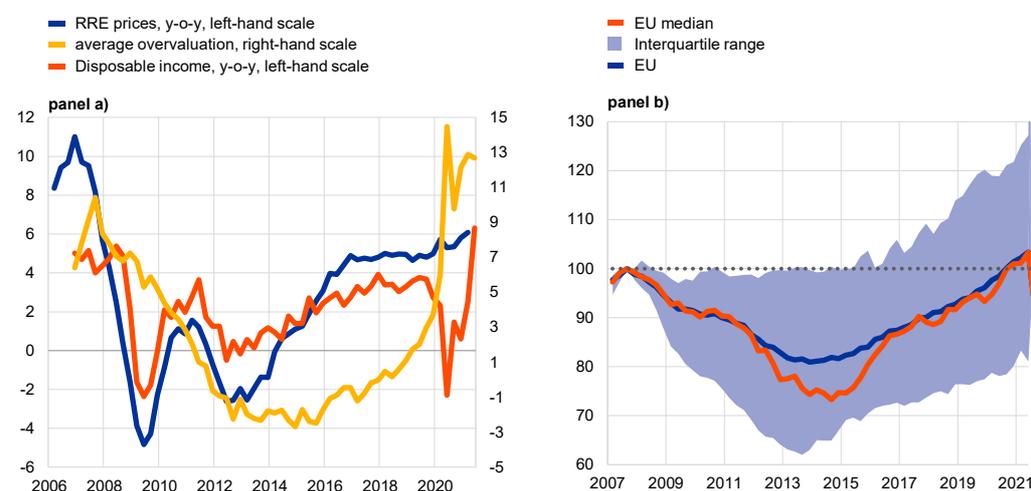


previously used for short-term rental may have returned to the long-term rental market. While this phenomenon might be temporary, higher price-to-rent ratios may induce households to postpone purchasing a house and decide to rent instead, putting house prices under downward pressure and, possibly, alleviating upward pressure arising from tighter housing supply. Most importantly, future price developments depend crucially on the recovery path, the timing of the termination of policy measures supporting households and, importantly, the trend for corporate insolvencies, which could spill over to the household sector to some extent. Households have seen their debt increasing in relation to both incomes and GDP, with the EU average standing at 107.2%¹² and 53.8% respectively as of the first quarter of 2021 (up from 101.9% and 50.4% respectively as of the fourth quarter of 2019).

Figure 4

RRE prices, disposable income and estimated overvaluation (panel a). Real house prices relative to the pre-financial crisis peak (panel b)

(panel a: year-on-year percentage changes, percentages; panel b: real index: Q3 2007 = 100)



Sources: ECB estimates, Eurostat.

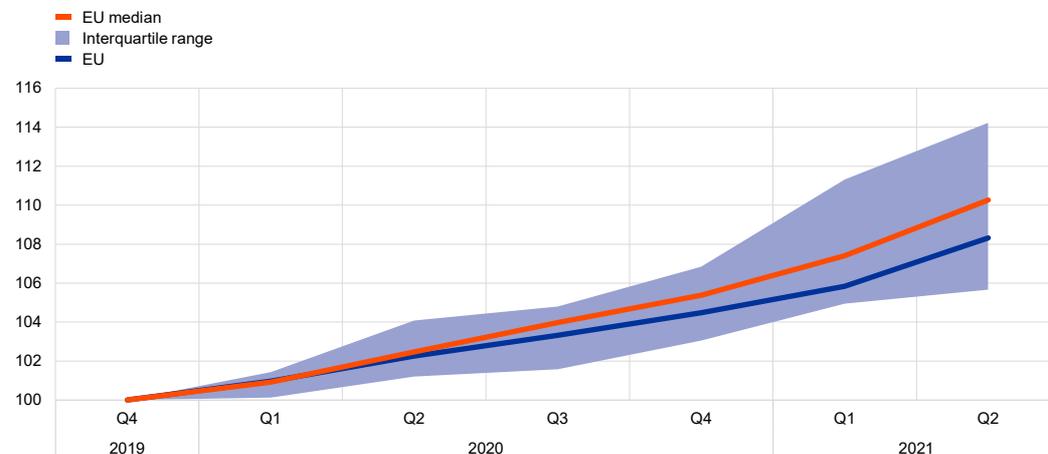
Notes: The last data point is the second quarter of 2021 for prices, disposable income and average overvaluation. For panel a, the average overvaluation is based on ECB's estimates. For panel b, the index was set to 100 when the pre-financial crisis peak in the EU aggregate real house price was reached (the third quarter of 2007). The HICP was used to deflate prices across all EU countries.

¹² For the computation of the average debt to income ratio across EU countries (simple average), only those countries for which up to date information is available are included in the calculation. Due to an absence of updated data, Bulgaria, Estonia, Cyprus, Latvia, Lithuania, Malta and Slovakia have not been included in the computation.



Figure 5
Price-to-rent ratios in the EU

(index: Q4 2019 = 100)



Note: The last data point is the second quarter of 2021.

Source: ECB.

Box 1

Effects of the pandemic on residential real estate markets

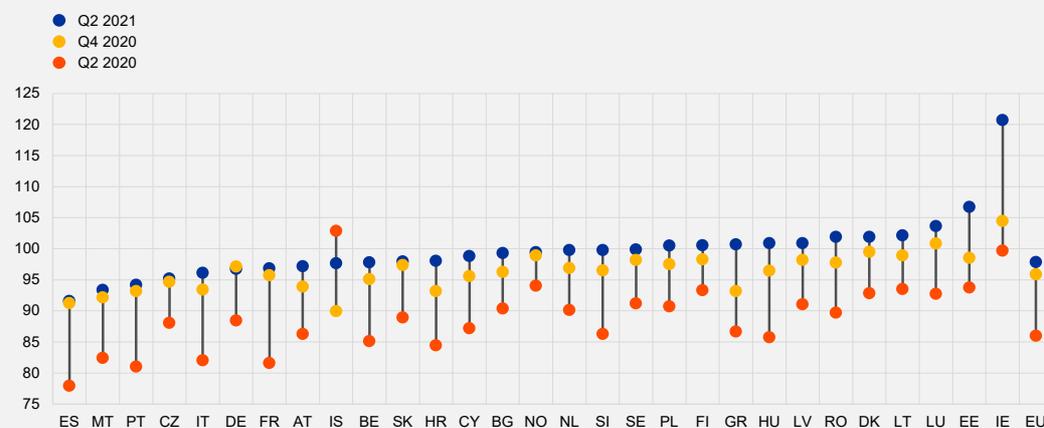
The impact of the pandemic has been dampened by government measures. Real GDP in the EU dropped by 14% in the second quarter of 2020, the quarter in which the impact was greatest that year. The negative effects of this downturn on household real disposable income through higher unemployment have been tempered by government policy responses to the pandemic, for example through short-term working benefits. As a result, the fall in household real disposable income in the EU was lower – just 1.8% year-on-year in the second quarter of 2020. Still, under an adverse scenario, the impact of the pandemic on household consumption through higher unemployment and the associated lower income prospects on the one hand, and – in the event of declining house prices – possible negative housing wealth effects on consumption on the other, could lead to second round effects on financial stability. Lower consumption could reduce firms' profitability and damage economic prospects, thereby worsening the financial stability of banks on the back of a surge in non-performing loans (NPLs).

The drop in economic activity and the impact on real disposable income varied significantly across EU countries. Real GDP growth rates in the second quarter of 2020 ranged between -21.6% in Spain and -2.6% in Ireland (Figure A). Household real disposable income growth varied between -8.4% in Spain and +7.5% in Poland in the same quarter (Figure B). Growth of credit to non-financial corporations slowed in some EU countries despite generous government schemes aimed at encouraging firms to invest. On the other hand, NPL ratios for such loans are still at record low levels, owing to the fiscal measures and loan moratoria in place in most EU countries.



Figure A
Real GDP levels relative to the fourth quarter of 2019

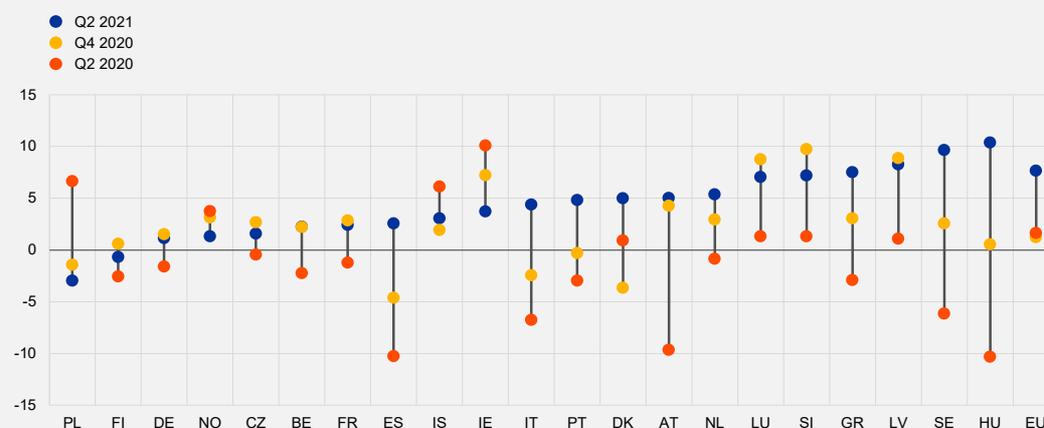
(index: Q4 2019 = 100)



Source: ECB.

Figure B
Real disposable income growth

(year-on-year percentage change)



Source: ECB.

Note: The last data point is the second quarter of 2021, except for CZ, LV, LU, IS (the first quarter of 2021).

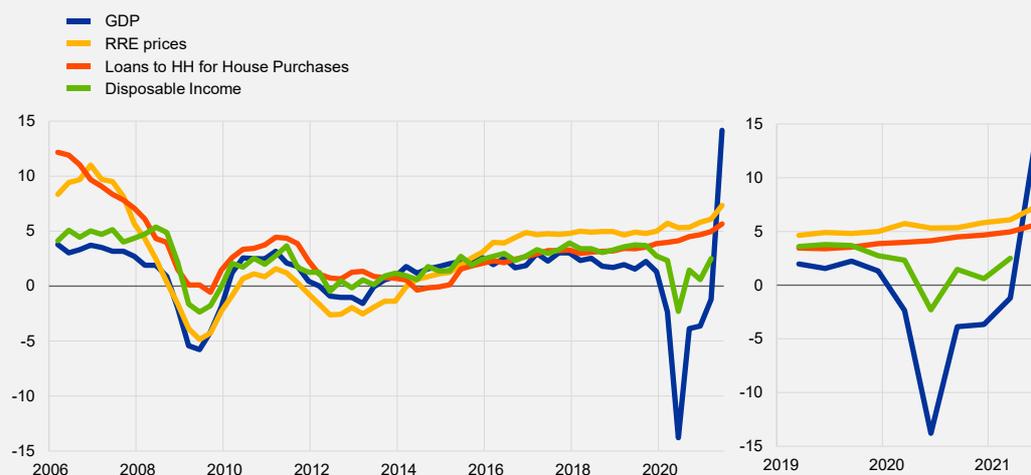
Notwithstanding conditions in the real economy, house prices and mortgage credit have decoupled from the rest of the economy and have continued to grow in most EU countries (Figure C). The average growth of real house prices in the EU was 4.7% in 2020, with growth rates ranging between 0.8% in Ireland and 14.5% in Luxembourg. In many countries house price growth actually accelerated throughout 2020 and recorded the highest numbers of the past three years, occasionally accompanied by higher growth in mortgage credit to households. In other countries flat credit provided by banks suggests that savings, wealth or other sources of funding have been used for house purchases. The number of real estate transactions slowed as a result of increased



uncertainty and the lockdowns at the beginning of the pandemic, before recovering quickly, nearing or even surpassing the levels of the previous year. This was an indication that the RRE sector was overheating.

Figure C
GDP, disposable income, RRE prices and loans to households for house purchases in the EU

(year-on-year percentage changes)



Sources: ECB, Eurostat.

Notes: Nominal values. The loans to households for purchases series is for the Euro Area. The last data point for disposable income is the first quarter of 2021, while for GDP, prices and loans to households for house purchases it is the second quarter of 2021.

There are several reasons why RRE markets remain buoyant despite the COVID-19 crisis.¹³

First, households' borrowing capacity was supported by low interest rates and government compensation schemes, keeping demand for housing high. Second, demand for housing in different segments of the market may have changed as a consequence of the lockdowns and the resulting need to work from home.¹⁴ Third, some countries reported increases in investment demand which could be the result of search-for-yield in times of low interest rates. Finally, there is evidence that those who are most affected by the crisis, given that they face short-term working or unemployment with a resulting drop in income, are less likely to be homeowners as they tend to be in a lower income category.¹⁵ Indeed, the most heavily affected sectors include restaurants, tourism etc. Nevertheless, the crisis may be considered to be a temporary phenomenon and trends for RRE

¹³ See European Central Bank (2021), "The euro area housing market during the COVID-19 pandemic", *Economic Bulletin*, Issue 7, which, as factors sustaining house prices throughout the pandemic, suggests, among others, fiscal and monetary policy measures, favourable financing conditions, and supply bottlenecks.

¹⁴ The preliminary evidence for some euro area countries shows, for example, an increased willingness to move to rural areas, which reduces house price pressures in urban areas. See European Central Bank (2021), "The euro area housing market during the COVID-19 pandemic", *Economic Bulletin*, Issue 7.

¹⁵ For an example see the box in European Central Bank (2021), "COVID-19 and income inequality in the euro area", *Economic Bulletin*, Issue 2.



markets are longer-term in nature. It is therefore important to continue monitoring developments in the housing market to see if the pandemic is having any lasting effects.



2 Cross-country risk analysis

The horizontal analysis is based on three different risk dimensions called “stretches”: the collateral stretch, the funding stretch and the household stretch. This report follows the methodology outlined in the related ESRB report¹⁶ and described in the annex to the report. The risk assessment starts with a mechanical evaluation of a scoreboard of key risk indicators, which are compared against critical thresholds. Based on the thresholds, each indicator is assigned a rating from 0 to 3. Table 1 shows the indicators used for the respective stretches discussed in the three subsections below. The ratings given by those indicators are further adjusted for additional information and expert judgement (Table 2). The additional information¹⁷ includes a set of country-specific indicators that convey information on a range of cyclical, structural and institutional drivers of the domestic RRE market. The “medium” and “high” categories highlight the existence of vulnerabilities that may need to be addressed either by macroprudential policies or by changes in other policy areas that affect RRE vulnerabilities.

¹⁶ European Systemic Risk Board (2019), *Methodologies for the assessment of real estate vulnerabilities and macroprudential policies: residential real estate*, September.

¹⁷ In particular, the additional information may include alternative indicators of vulnerabilities (e.g. 12M rates of house price or mortgage credit growth, or growth of pure new loans), information from national authorities (estimates of house price overvaluation, data on lending standards for new loans, characteristics of the stock of existing loans, an analysis of household vulnerabilities) and structural factors related to housing and mortgage credit markets.



Table 1
Scoreboard

Country	Indicators						
	Collateral stretch				Lending stretch		
	Residential real estate price index, 36m real growth, average %	Residential price index relative to trend	House price to income ratio (deviation from average, %)	Econometric model (overvaluation, %)	Loans to households for house purchases, 36m real growth, average %	Loans to households for house purchases relative to trend	Household loan spread
AT	5.2	1.14	52.0	33.0	4.2	1.01	1.4
BE	4.7	1.02	24.0	14.0	7.9	1.16	1.7
BG	3.8	1.18	-5.0	-10.0	13.1	1.08	2.7
CY	1.5	0.97	0.0	5.0	-8.2	0.75	2.1
CZ	8.1	1.16	36.0	30.0	5.2	0.99	1.9
DE	7.1	1.20	23.0	19.0	4.6	1.08	1.7
DK	4.8	1.09	27.0	11.0	1.3	0.96	2.4
EE	5.2	1.16	13.0	17.0	5.3	1.12	1.7
ES	2.7	1.03	12.0	12.0	-1.9	0.80	1.4
FI	0.8	0.96	5.0	1.0	1.9	0.94	0.7
FR	3.8	1.00	17.0	-3.0	5.7	1.04	1.1
GR	6.3	1.10	-1.0	-2.0	-10.9	0.61	2.7
HR	8.1	1.21	1.0	-9.0	7.0	1.17	2.5
HU	7.5	1.17	12.0	-1.0	6.9	1.07	3.5
IE	2.3	1.10	-6.0	-20.0	-3.8	0.83	3.1
IS	5.4	1.20	3.7		8.2	1.04	2.3
IT	0.6	0.98	-3.0	-1.0	1.4	0.92	0.9
LI							
LT	7.0	1.26	4.0	14.0	6.7	1.04	2.1
LU	12.3	1.17	68.0	48.0	7.7	1.09	1.4
LV	5.8	1.27	4.0	-18.0	0.3	1.16	2.3
MT	4.1	1.05	26.0	-25.0	8.6	1.08	1.5
NL	6.8	1.15	19.0	14.0	0.5	0.95	1.5
NO	3.8	1.03	28.9		4.6	0.99	1.5
PL	5.8	1.12	5.0	-6.0	2.8	0.89	2.7
PT	8.7	1.27	22.0	6.0	0.7	0.86	0.8
RO	0.6	1.12	-23.0	-34.0	7.5	1.03	3.1
SE	4.0	1.04	66.0	51.0	4.1	1.00	1.3
SI	7.0	1.24	16.0	3.0	4.5	0.94	1.6
SK	10.2	1.23	17.0	13.0	7.6	1.05	0.9
EEA average	5.3	1.1	16.0	6.0	3.6	1.0	1.9
EEA median	5.2	1.1	13.0	5.0	4.6	1.0	1.7
Low	2.5	1.00	4.0	0.0	3.0	1.05	1.0
Medium	5.0	1.04	10.0	6.0	6.0	1.10	1.5
High	7.5	1.08	16.0	12.0	9.0	1.15	2.0



Country	Household stretch			Summary measures			
	Household debt, % of income	Household financial assets to debt, %	Debt service to income ratio for households, %	Average rating across indicators	Average rating across collateral indicators	Average rating across lending indicators	Average rating across household indicators
AT	87.7	386.3	9.5	1.5	2.75	1.0	0.7
BE	107.7	484.2	11.4	1.8	2.0	2.0	1.3
BG	38.5	585.7	6.1	0.8	1.0	1.3	0.0
CY	136.3	279.5	18.6	0.9	0.3	0.0	2.3
CZ	59.6	444.4	6.8	1.2	3.0	0.7	0.0
DE	90.4	372.2	9.3	1.5	2.8	1.0	0.7
DK	223.5	362.1	17.3	1.4	2.3	0.0	2.0
EE	68.0	358.9	7.1	1.3	2.5	1.3	0.0
ES	94.7	341.9	11.0	1.1	1.8	0.7	1.0
FI	119.7	239.7	12.0	1.4	0.5	1.0	2.7
FR	102.0	402.5	11.4	1.2	1.3	1.0	1.3
GR	78.4	298.9	15.5	0.9	1.3	0.0	1.3
HR	54.3	379.3	7.2	1.1	1.5	1.7	0.0
HU	36.1	683.9	5.5	0.9	1.8	1.0	0.0
IE	102.5	359.2	12.5	0.8	0.8	0.0	1.7
IS	139.9	347.1		1.3	1.7	0.7	1.5
IT	65.1	647.8	11.1	0.4	0.0	1.0	0.3
LI							
LT	36.9	467.3	4.4	1.0	2.3	0.7	0.0
LU	177.8	247.8	12.4	2.3	3.0	1.7	2.3
LV	33.3	523.0	3.6	0.8	1.5	1.0	0.0
MT	87.6	437.8	11.4	1.4	1.5	1.7	1.0
NL	199.8	357.5	17.8	1.8	2.8	0.7	2.0
NO	232.9	151.7	14.0	1.8	1.7	0.7	3.0
PL	55.4	325.7	9.2	0.5	1.5	0.0	0.0
PT	93.6	328.7	12.1	1.7	2.8	1.0	1.3
RO	24.5	484.4	4.8	0.5	0.8	0.7	0.0
SE	188.1	395.9	18.8	1.8	2.3	1.0	2.0
SI	43.1	488.9	5.1	1.0	2.3	0.7	0.0
SK	73.3	204.2	9.5	1.9	3.0	1.7	1.0
EEA average	98.3	392.6	10.6	1.2	1.8	0.9	1.0
EEA median	87.7	372.2	11.1	1.2	1.8	1.0	1.0
Low	75.0	240.0	10.0	1.0	1.0	1.0	1.0
Medium	85.0	260.0	12.0	1.2	1.2	1.2	1.2
High	95.0	280.0	14.0	1.7	1.7	1.7	1.7

Source: ECB, the national authorities of Iceland and Norway, the Banque centrale du Luxembourg, the Central Bank of Malta.
Notes: The latest observation is the second quarter of 2021 for the indicators in the collateral stretch, August 2021 for those in the funding stretch and the first quarter of 2021 for those in the household stretch (with some exceptions). Official data from the National Statistics Office of Malta on disposable income are only available up to the second quarter of 2017 and the quarterly values for the first quarter of 2021 are based on Central Bank of Malta projections. Official data from STATEC on disposable income are only available on an annual basis up to 2020 and quarterly values for 2021 are Banque centrale du Luxembourg projections. The overvaluation figures are estimated by the European Central Bank.



Table 2

Adjusted ratings per stretch

Country	Collateral stretch	Funding stretch	Household stretch
AT	high	medium	low
BE	medium	medium	medium
BG	medium	medium	low
CY	low	low	high
CZ	high	medium	low
DE	high	medium	low
DK	medium	medium	high
EE	high	medium	medium
ES	low	low	medium
FI	low	medium	high
FR	medium	medium	medium
GR	low	low	medium
HR	medium	medium	low
HU	high	medium	low
IE	medium	medium	medium
IS	medium	medium	medium
IT	low	low	low
LI	medium	low	medium
LT	medium	medium	low
LU	high	medium	high
LV	low	low	low
MT	medium	medium	medium
NL	medium	medium	high
NO	medium	medium	high
PL	low	medium	low
PT	high	medium	medium
RO	low	medium	low
SE	high	medium	high
SI	high	low	low
SK	high	medium	medium

Source: ESRB.

2.1 Collateral stretch

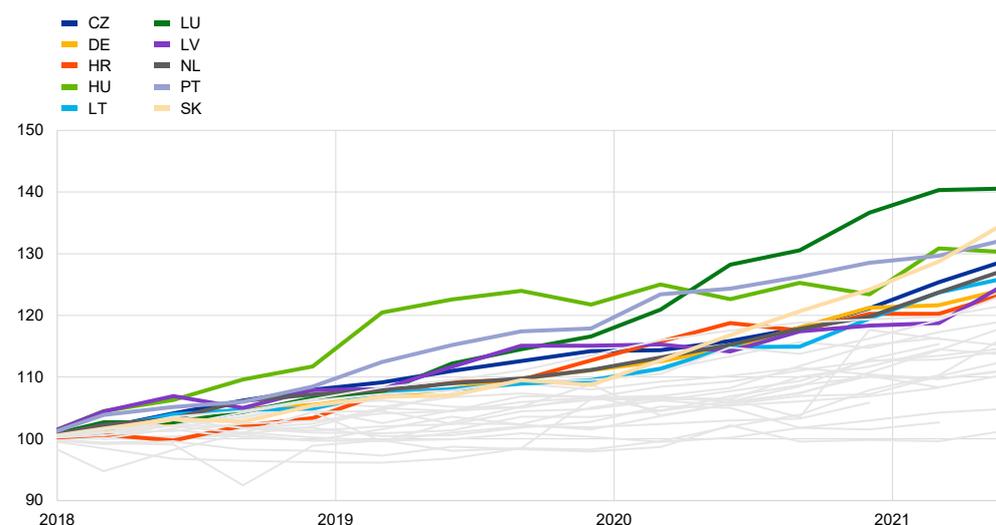
Despite the pandemic, house prices have continued to increase and have even accelerated in several EEA countries. Over the last three years, house price growth has been particularly



pronounced in Czech Republic, Germany, Croatia, Lithuania, Luxembourg, Hungary, the Netherlands, Portugal, Slovenia and Slovakia (Figure 6), with the real rate of increase ranging from 1% (Italy) to 12% (Luxembourg) as of the second quarter of 2021. Notwithstanding the uncertainty and the drop in economic activity due to the pandemic, no country in the EEA recorded overall real house price declines in 2020. In several countries, such as Czech Republic, Denmark, Germany, Estonia, Lithuania, Luxembourg, the Netherlands, Austria, Slovakia and Sweden, house price growth has been elevated recently and in some countries it has accelerated (Figure 7). Meanwhile in Ireland, Spain, Italy, Cyprus, Romania and Finland real house price growth has slowed to below 3%. As a result of the decoupling of house price changes from economic activity, in many countries the gap between house price growth and income growth has widened recently. This deviation has been particularly pronounced in Denmark, Luxembourg, Austria, Portugal and Sweden (Figure 8). The highest growth rates have been seen in countries that had experienced more resilient income dynamics. Meanwhile, the correlation between house prices and GDP growth has recently been weaker than in the past (Figure 9).

Figure 6
Real house prices

(index: Q4 2017 = 100)



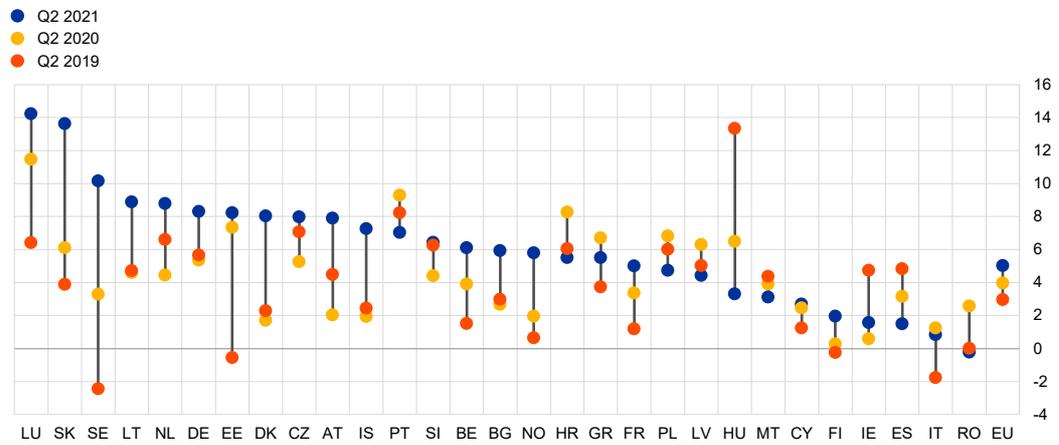
Sources: ECB, Eurostat, the national authorities of Iceland, ESRB calculations. The countries displayed in the legend are those with the highest cumulative growth in the reference period.

Notes: The last data point is the second quarter of 2021 (with some exceptions). Prices were deflated by the HICP.



Figure 7
Real house price growth

(year-on-year percentage change)

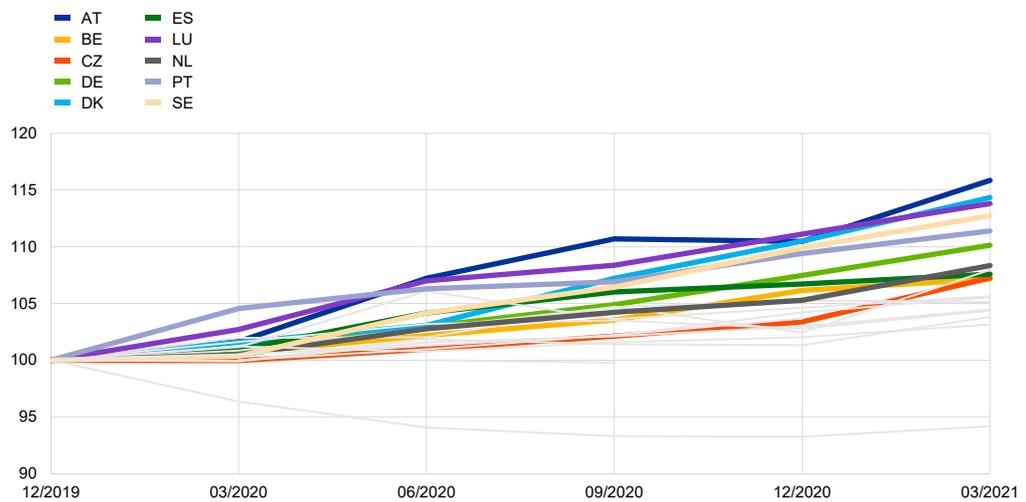


Sources: ECB, Eurostat, the national authorities of Iceland, ESRB calculations.

Notes: The last data point is the second quarter of 2021, except for DK, IE, AT and FI (the first quarter of 2021), and CY (the fourth quarter of 2020). Prices were deflated by the HICP. Each dot represents the average real house price growth in the corresponding previous four quarters.

Figure 8
Price-to-income ratio

(index: Q4 2019 = 100)



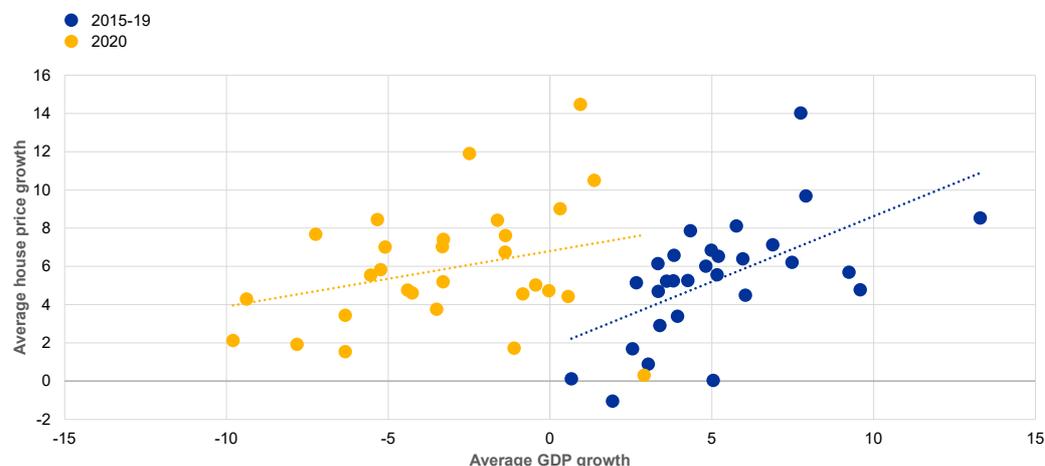
Sources: ECB, ESRB calculations.

Note: The last data point is the first quarter of 2021 (with some exceptions). The countries displayed in the legend are those with the highest cumulative growth in the reference period.



Figure 9
House price and GDP growth

(year-on-year percentage change)



Sources: ECB, ESRB calculations.

Note: Each point represents an EEA country. Nominal values.

As a result of the disconnect between house price changes and economic activity, overvaluation risks have further increased. Sharp and unforeseen falls in house prices may induce households to abruptly cut back on consumption and/or result in increased losses on banks' loan portfolios, particularly when overvalued prices are combined with high household indebtedness. Accordingly, reliable valuation techniques are key for monitoring real estate trends from a financial stability perspective. In this context house price valuations are estimated using the house price-to-income ratio and an econometric model based on an inverted demand equation.¹⁸ While providing a consistent set of benchmarks across countries, overvaluation measures are surrounded by significant uncertainty and may be sensitive to country-level specificities, such as tax treatment or structural property market characteristics. Box 2 describes the model-based method used, as well as other house price overvaluation measures for the EU. The combined analysis of the price-to-income deviation and the econometric model based on an inverted demand equation show that the risk of overvaluation is particularly significant in Luxembourg, Sweden, Austria, Czech Republic and Portugal¹⁹ (Figure 10). During the pandemic, house price growth has been relatively higher in those countries in which overvaluation risks and household indebtedness were already substantial before the pandemic, thus compounding the risks of a sharp reversal (Figure

¹⁸ The house price-to-income metric is a statistical indicator that measures overvaluation in terms of the deviation of the ratio from its long-term historical average. While statistical indicators such as the price-to-disposable-income ratio offer intuitive appeal and ease of construction, such metrics fail to capture other factors that drive fundamental house prices, notably those relating to the supply side of the housing market and to developments in mortgage markets. Accordingly, the scoreboard complements the measure of overvaluation based on the deviation of the price-to-income ratio from its long-term historical average by including estimates from an econometric model which links real house prices to fundamental factors such as real disposable income, interest rates and a proxy for housing supply. For details of the methodologies used in the scoreboard, see the box entitled "Tools for detecting a possible misalignment of residential property prices from fundamentals", *Financial Stability Review*, ECB, June 2011, the box entitled "A model-based valuation metric for residential property markets", *Financial Stability Review*, ECB, November 2015 and Box 2 of this report.

¹⁹ Overall, estimates from the valuation models are subject to considerable uncertainty and should be interpreted with caution. Different valuation measures can point to lower/higher estimates of overvaluation. Alternative approaches include those of Muellbauer and Murphy (1997), Gattini and Hiebert (2010) and Philipponet and Turrini (2017).



11). All in all, according to these indicators the house price overvaluation risk level has increased in the whole EEA.

Box 2

House price overvaluation measures for the European Union

In general, two different approaches are used to assess house price valuations. The first approach is based on statistical indicators, and the most commonly used indicators are the house price-to-rent and the house price-to-income ratios. The first of these compares house prices with the user cost of housing. In the long term house prices should be equal to the present value of rental income flow. The house price-to-income ratio reflects affordability and indicates whether house prices may be subject to a potential correction if their growth exceeds income growth. Some interesting work has been done on this by the European Commission where Bricongne et al. (2019) have computed data for price levels.²⁰ Another advantage of price levels is that they also make it possible to calculate the number of years of income required to pay for an apartment of 100 square metres. The authors see risks arising if this number exceeds ten. At the same time, these calculations also have some limitations – such as limited availability – which require an approximation in some cases and a focus on a particular segment of the market. Further work has been done by the European Commission²¹, taking regional housing markets into account to calculate price levels at the regional level and facilitating a more detailed analysis of affordability and supply-demand mismatches at the regional level.

The second approach is model based, where different variables reflecting fundamental supply and demand factors are used to explain house prices. While the first method has the advantage of being transparent, the second method might have better explanatory power, despite the risk of misspecification. In this report we use both approaches, and we set out below the ECB's model-based approach and we include alternative model-based methods for house price valuation in the EU from the literature.

The ECB model for house price valuation is also used for the analysis in this report, and consists of an inverted demand model commonly used in the economic literature.²² In inverted form, real house prices can be expressed as a function of income, the real housing capital stock per household, and real average mortgage interest rates as proxy for the user cost of housing:

$$\log rhp_t = \alpha_0 + \alpha_1 \log y_t - \alpha_2 \log rhcs_t - \alpha_3 int_t + e_t$$

where rhp_t are real house prices, y_t is real disposable income per household, $rhcs_t$ the real housing capital stock per household, and int_t the real average mortgage interest rate (as a proxy for the user cost of housing) and e_t residuals. The model is estimated in a Bayesian setting, where the prior distributions of the model coefficients are centred at the values typically found in the

²⁰ Bricongne, J.-C., Turrini, A. and Pontuch, P. (2019), “**Assessing House Prices: Insights from “Houselev”**”, a Dataset of Price Level Estimates”, *Discussion Papers*, No 101, *European Economy*.

²¹ European Commission (2021), “Mapadomo: a database on regional housing markets”, *Note for the attention of the EPC LIME Working Group*, 6 April.

²² See, for example, Muellbauer, J. (2012), “**When is a housing market overheated enough to threaten stability?**”, *Department of Economics Discussion Paper Series*, No 623, University of Oxford.



literature.²³ The prior means for the model coefficients are -0.015 for interest rates, 1.6 for income and -2.5 for the housing capital stock. The same means and tightness of the prior distributions are used for all countries.

The European Commission has investigated different model-based approaches for the valuation of house prices. Philipponnet and Turrini (2017)²⁴ use a housing market equation based on Muellbauer and Murphy (1997)²⁵ with population, real disposable income per capital, real housing investment and real long-term interest rates for the EU. They estimate this equation in panel form and with country-specific estimates. The above-mentioned study by Bricongne et al. (2019) estimates equilibrium prices based on price levels and compares the results with estimates using indices,²⁶ with explanatory variables similar to those used by Philipponnet and Turrini (2017).

In Figure we show the model-based results for the overvaluation of house prices according to the ECB and the European Commission approach, along with – on the right-hand axis – the house-price-level-to-income ratio according to the European Commission minus ten years, which is judged to be the level from when the indicator points to risks building up.

The figure shows that the two model-based approaches are relatively close to each other for most countries, although there are some exceptions including Sweden, Luxembourg, Estonia, Bulgaria, Latvia and France. While for the first three countries, the ECB model yields a higher overvaluation, for the other three countries the European Commission model estimates are higher. The estimates for the number of years of income needed to pay for 100 square meters are close to the model-based estimates in only a few countries as these estimates provide information on affordability but not on the impact of supply factors.

²³ See, for example, Meen, G. (2001), *Modelling spatial housing markets: theory, analysis and policy*, Kluwer Academic Publishers, Norwell, Massachusetts.

²⁴ Philipponnet, N. and Turrini, A. (2017), **Assessing house price developments in the EU**, *Discussion Paper 048*, European Commission.

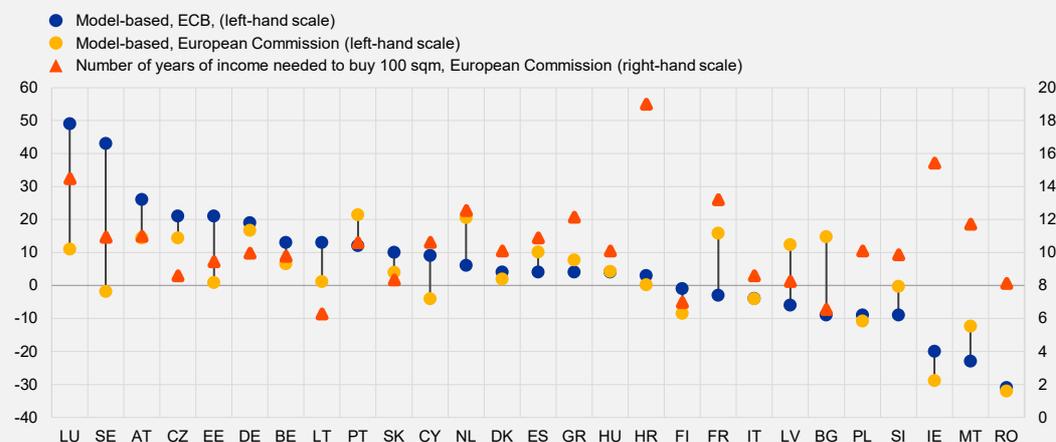
²⁵ Muellbauer, J. and Murphy, A. (1997), "Booms and busts in the UK housing market", *Economic Journal*, No 107, pp. 1701-1727.

²⁶ Bricongne, J.-C., Turrini, A. and Pontuch, P. (2019), **Assessing House Prices: Insights from "Houselev", a Dataset of Price Level Estimates**, *Discussion Papers*, No 101, European Economy.



Figure
House price overvaluations, different models

(percentages; number of years of income)



Sources: ECB estimates, European Commission estimates, ESRB calculations. Note: Figures as of the fourth quarter of 2020.

Only a few other studies estimate house price valuations for a range of European countries.

Cuestas et al. (2021)²⁷ estimate house price misalignments for 20 European countries. They estimate the long-term relationship between the house price index and compensation of employees, capturing real disposable income, mortgage interest rates for the user cost of housing, and the number of dwellings that make up housing supply. Their estimation suggests that the coefficient ranges between 1.1 and 1.2 for compensation, -0.005 and -0.012 for interest rates, and -1.65 and -2.02 for dwellings. These figures are in line with the findings in the literature for the variables reflecting income, interest rates and housing supply respectively. Overall, income is found to be the main driver of house prices. Geng (2018) assesses house price valuation risks based on the fundamentals for 20 OECD countries.²⁸ He uses real disposable income, financial wealth, interest rates and demographic trends as demand variables, and housing stock and the long-run elasticity of real dwelling investment in respect of real house prices as supply factors. In addition, he introduces structural and institutional factors such as tax incentives and rent controls. The results are in line with findings in the literature, with a 1% rise in real disposable income per capital increasing house prices by 1.5-1.7%, a 1 percentage point increase in the real mortgage rate reducing house prices by 1.8-2.8% and a 1% increase in the housing stock per capita reducing house prices by about 1.3%. Financial wealth has a small positive effect on house prices. Political, institutional and structural factors are, according to this study, important drivers of long-term equilibrium house prices, as the above-mentioned elasticities are found to vary depending on the underlying structural factors.

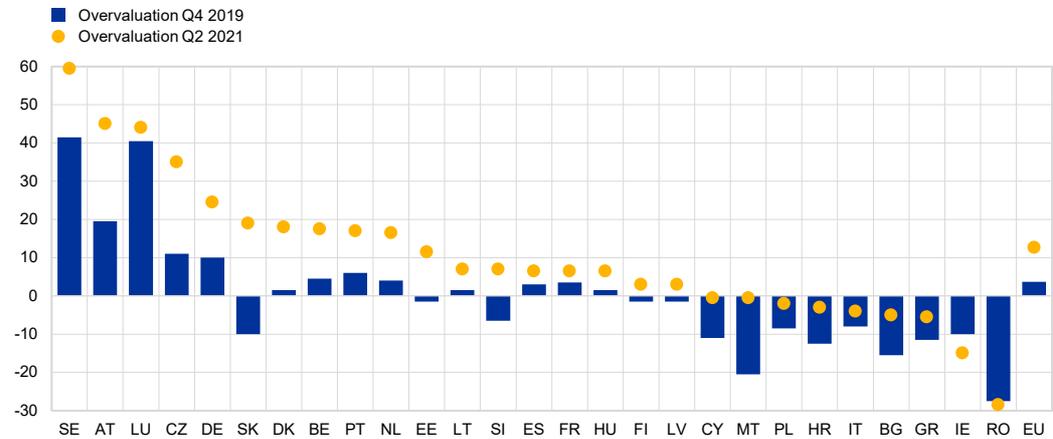
²⁷ Cuestas, J. C., Kukk, M. and Levenko, N. (2021), "Misalignments in House Prices and Economic Growth in Europe", Working Paper Series, No 1, Eesti Pank.

²⁸ Geng, N. (2018), "Fundamental Drivers of House Prices in Advanced Economies", IMF Working Papers, No 18/164.



Figure 10
House price overvaluation

(percentages)

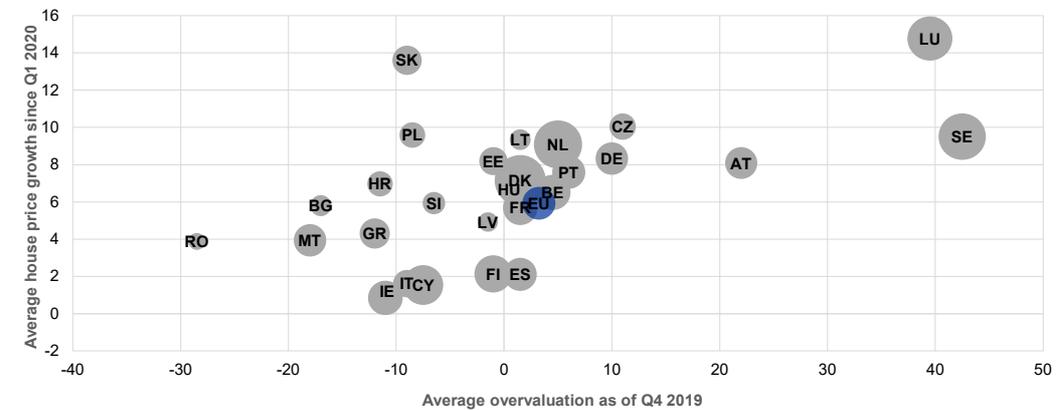


Source: ECB estimates.

Notes: The last data point is the second quarter of 2021, except for CY (the fourth quarter of 2020), DK, FI, HU, IE (the first quarter of 2021). The overvaluation is the simple average for the price-to-income and an inverted demand-based model estimates. The EU overvaluation is computed as the simple average across all EU countries.

Figure 11
House price growth and overvaluation

(y-axis: year-on-year percentage change; x-axis: percentages)



Sources: ECB, ESRB calculations, Central Bank of Malta.

Notes: The size of the bubbles reflects the household debt-to-income ratio. The last data point for house prices is the second quarter of 2021, for overvaluation the fourth quarter of 2019 and for household indebtedness the first quarter of 2021 (with some exceptions). The overvaluation figures are estimated by the European Central Bank. Official data from the National Statistics Office of Malta on disposable income is only available up to the second quarter of 2017 and the quarterly values for the first quarter of 2021 are based on Central Bank of Malta projections.

The slowdown in construction activity might exert further upward pressure on house prices in the short term. House price trends are the result of several factors, such as broad-based public support measures, the preference of investors, including non-residents, for real estate assets in

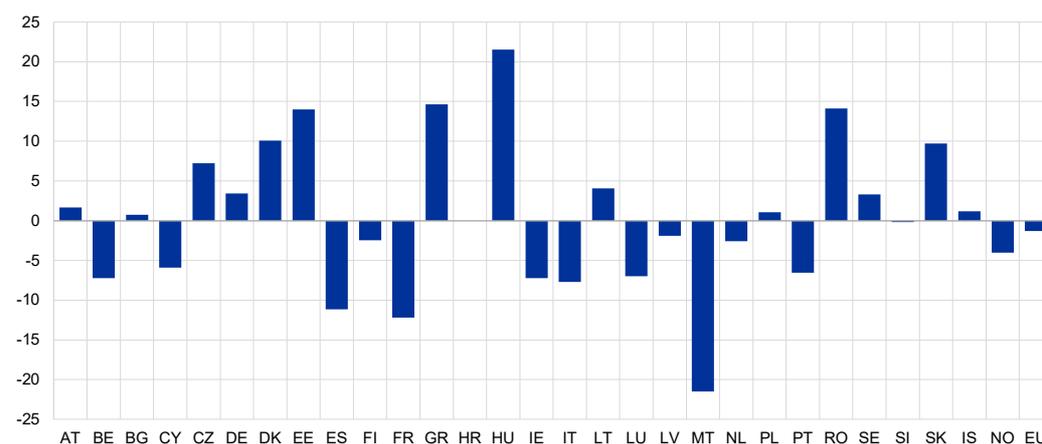


times of high uncertainty and very low interest rates, as well as increasing demand due to a foreseeable rise in teleworking. Finally, as a result of the lockdowns, supply chain shortages, rising uncertainty and declining builders' confidence, RRE investments slowed substantially in several countries, including (reading from left to right) Austria, Belgium, Bulgaria, Czech Republic, Spain, France, Ireland, Italy and Malta (Figure 12). While the number of residential building permits issued also plummeted in several countries, particularly in the second quarter and the third quarter of 2020, it has recently picked up again, thus surpassing pre-crisis levels in most countries (Figure 13). Tighter housing supply might have put additional pressure on house prices and will possibly continue to do so in the short term, particularly in those markets where existing house supply bottlenecks are already present. On the other hand, rental price growth decelerated in most EEA countries, pushing up house-price-to-rent ratios. The slowdown in rental price growth possibly reflects an increase in the supply of properties available for long-term rental, as properties previously used for short-term rental may have moved to the long-term rental market²⁹. Although this phenomenon might be temporary, higher price-to-rent ratios may induce households to postpone purchasing a house and rent instead. This reduction in demand could put house prices under downward pressure.

Taking into account the scoreboard plus additional information, the risk related to the collateral stretch is assessed to be high in Czech Republic, Germany, Estonia, Luxembourg, Hungary, Austria, Portugal, Slovenia, Slovakia and Sweden, while it is assessed to be medium in Belgium, Bulgaria, Denmark, Ireland, France, Croatia, Lithuania, Malta, the Netherlands, Iceland, Liechtenstein and Norway. In the other countries the risk is assessed to be low (Table 2).

Figure 12
RRE investment growth in 2020

(year-on-year percentage change)



Source: ECB.

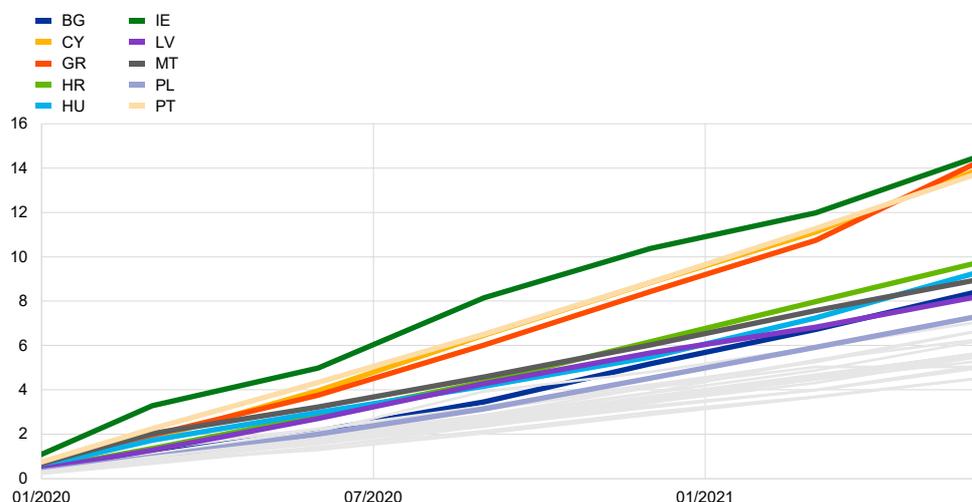
Notes: Real values. Annual data. No data for HR.

²⁹ On the reduction in the number of short term-rental properties, please also see the note "The impact of COVID-19 on the European short-term rental market" published by Banca d'Italia on 3 February 2021.



Figure 13
Cumulative building permits issued since 2020

(multiple of the average quarterly building permits issued in 2019 in each country)



Source: Eurostat.

Notes: The last data point is the second quarter of 2021 (with some exceptions). The series is not seasonally adjusted.

2.2 Funding stretch

Notwithstanding the COVID-19 shock, lending to households by monetary financial institutions has remained robust.

As a result of a combination of buoyant loan originations (which slowed slightly at the onset of the pandemic) and decelerating redemptions (partly explained by households' increased reliance on moratoria), the stock of lending by financial institutions to households for house purchases has continued to increase at a sustained pace (Figure 14). Net lending growth has been particularly high in Bulgaria, Iceland, Malta, Hungary, Romania, Croatia, Czech Republic, Slovakia and Luxembourg, with real rates above 6% (Figure 15). In some of these countries, namely Bulgaria, Iceland, Malta, Hungary, Croatia, Czech Republic and Luxembourg, lending growth has even accelerated. In Latvia, Cyprus and Portugal, growth rates turned positive in Aug 2021 from the negative rates observed in December 2019, while the Netherlands, Spain, Ireland and Greece are the only countries which have continuously recorded negative growth rates. In many countries, rapid lending growth was accompanied by rapid house price growth, thus raising concerns about a potential self-reinforcing feedback loop between mortgage lending and real estate price trends (Figure 16). While credit growth may support price trends in the short term, it is also closely related to the higher downside risks to house prices over the medium term³⁰.

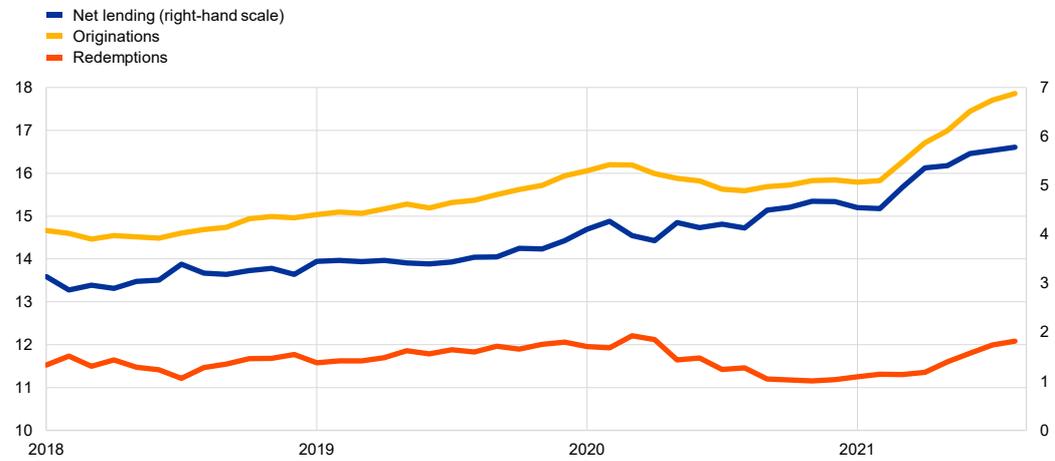
³⁰ See Chapter 2 entitled "Downside Risks to House Prices" of the **Global Financial Stability report**, IMF, April 2019.



Figure 14

Growth in net lending to households for house purchases and components

(year-on-year percentage change)

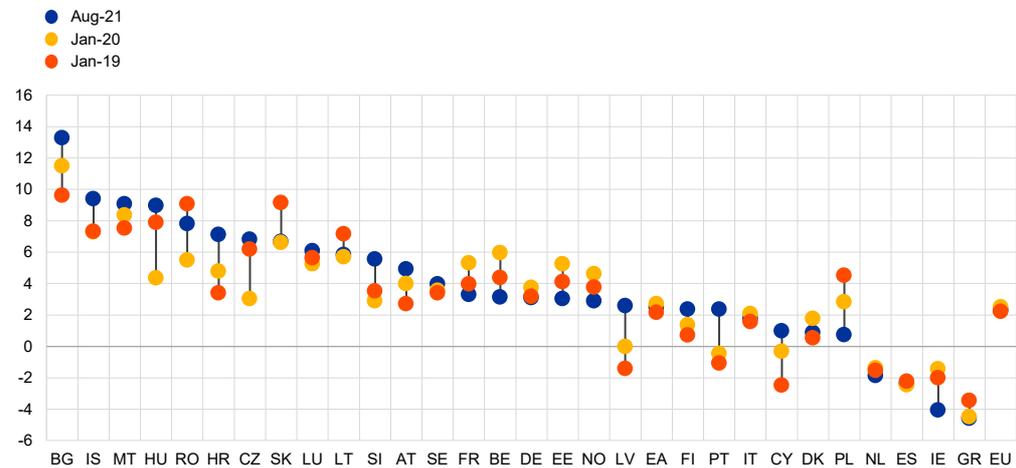


Notes: The figures refer to the euro area aggregate. Nominal values. Growth in origination is computed as the sum of pure new loans over the previous 12 months divided by the stock of loans at time t-12. Redemptions are obtained as the difference between growth in originations and growth in transactions (computed similarly to originations). The last observation is from August 2021.

Figure 15

Lending to households for house purchases across EEA countries

(year-on-year percentage change)



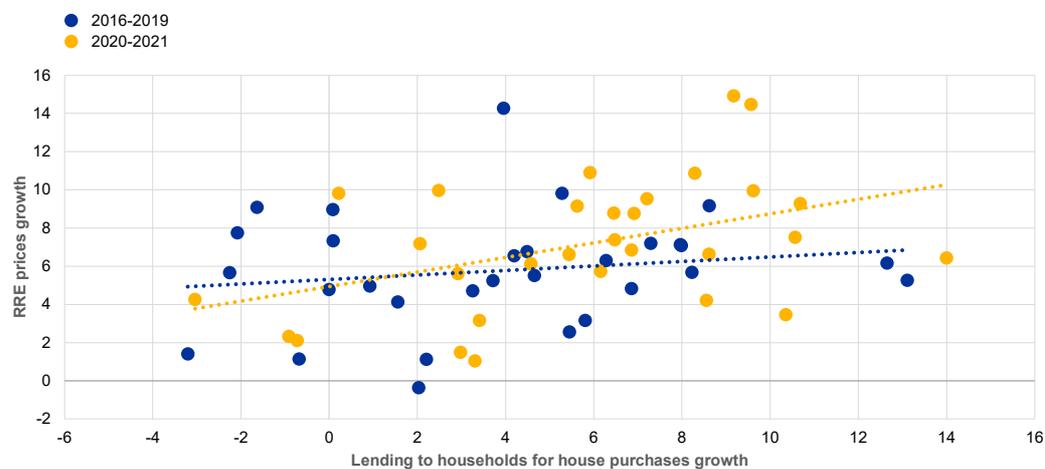
Sources: ECB, ESRB calculations.

Notes: Real values. The growth rates shown were obtained from the index of notional stock series. For euro area countries (with the exception of Spain) the adjusted loans series (i.e. adjusted for loan sales, securitisation and notional cash pooling) are used. The HICP was used to deflate the index.



Figure 16
Lending to households for house purchases and RRE prices growth

(year-on-year percentage change)



Sources: ECB, ESRB calculations.

Notes: Each dot shows the average nominal year-on-year quarterly growth rates (for RRE prices) and the year-on-year monthly growth rates (for lending to households for house purchases) in each period. For euro area countries (with the exception of Spain) the adjusted loans series (i.e. adjusted for loan sales, securitisation and notional cash pooling) are used.

Persistently high lending to households is mainly the result of record low financing costs and government support measures.

Whilst the cost of borrowing for house purchases³¹ was already at very low levels compared with historical standards, both the conventional and the unconventional monetary policies implemented by central banks following the onset of the pandemic have pushed financing costs to record low levels (Figure 17, panel a). Meanwhile, with few exceptions, lending margins on loans to households for house purchases remained broadly unchanged until the end of the first half of 2020, when they declined to some degree (Figure 17, panel b). Indeed, according to the euro area bank lending survey, the general level of interest rates has recently been an important driver of households' demand for housing loans, alongside positive housing market prospects and consumer confidence (Figure 18). At the same time, again according to the euro area bank lending survey, in 2020 banks tightened lending standards mainly as a result of macroprudential policy recommendations and increased risk perceptions (Figure 19). Similarly, banks tightened credit conditions, in particular, by charging higher margins on riskier loans. Since the first quarter of 2021, banks have started to loosen their lending standards and credit conditions once again, but there was some tightening again afterwards. Similar considerations hold true for Czech Republic, Denmark and Norway, according to the most recent editions of the bank lending surveys carried out by Česká národní banka, Danmarks Nationalbank and Norges Bank. Further moderation in banks' risk perceptions towards households might support looser credit standards and boost house prices further as the recovery unfolds. Additional factors that have contributed to the resilience of lending to households include government support schemes that have kept down the number of people unemployed, thus sustaining households' capability to obtain funding.

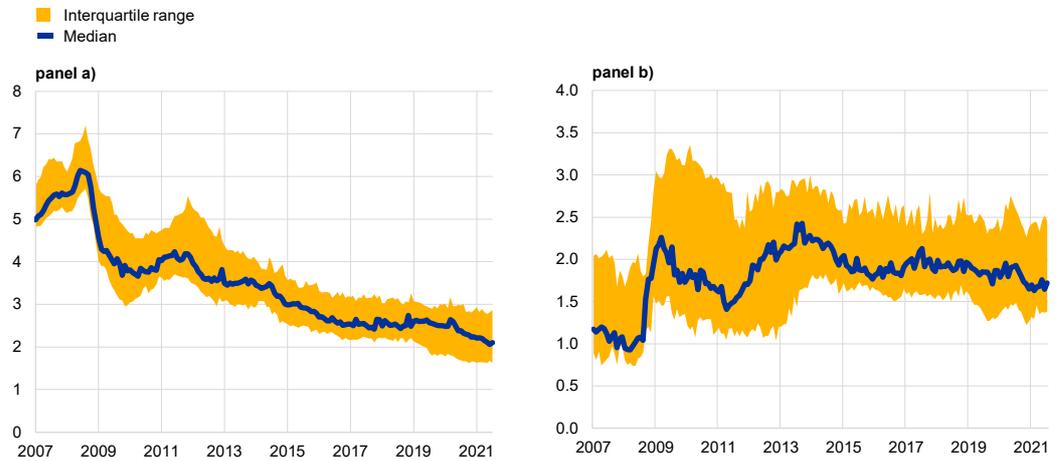
³¹ The cost of borrowing in this section is measured by the annual percentage rate of change.



Figure 17

Cost of borrowing (panel a) and lending margins on loans to households for house purchases (panel b) in the EU

(panel a: annual percentage rate of charge; panel b: percentage points)



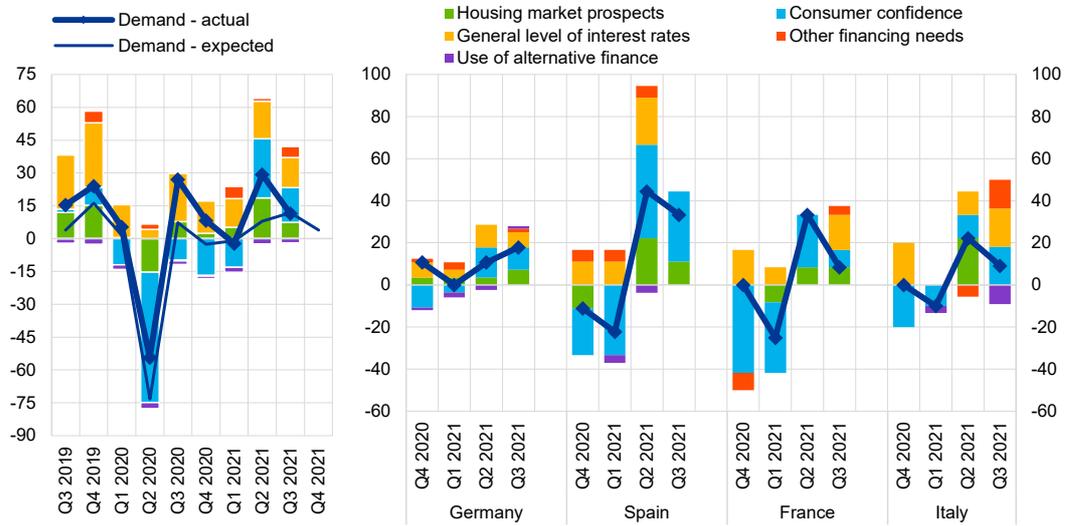
Sources: ECB, ESRB calculations.

Notes: The last data point is August 2021. The cost of borrowing here is measured by the annual percentage rate of charge.

Figure 18

Euro area bank lending survey: demand for loans to households for house purchases

(net percentages of banks reporting an increase in demand, and contributing factors)



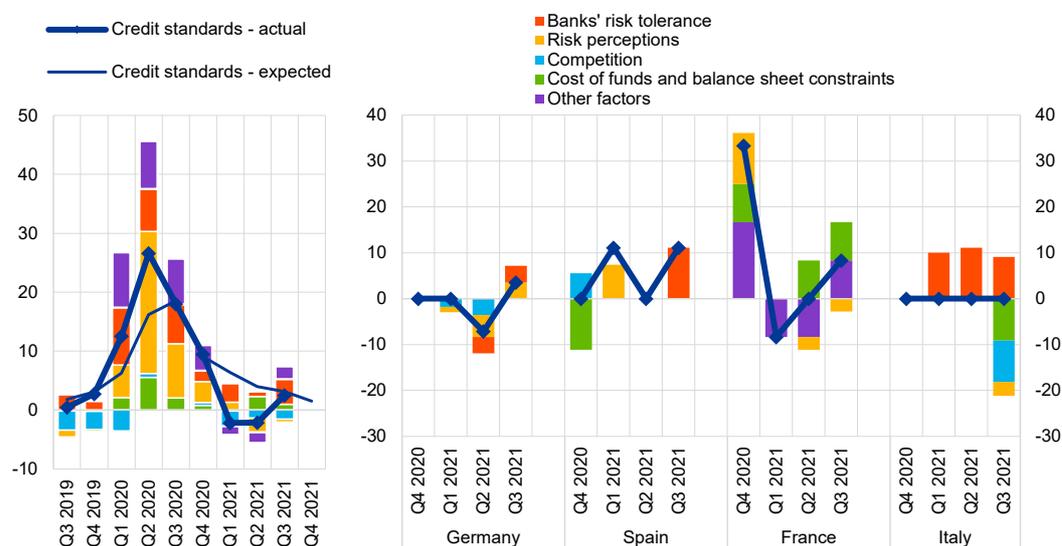
Source: ECB.

Note: The last data point is the third quarter of 2021 (actual), the fourth quarter of 2021 (expectations).



Figure 19
Euro area bank lending survey: lending standards on loans to households for house purchases

(net percentages of banks reporting a tightening in credit standards, and contributing factors)



Source: ECB.

Note: The last data point is the third quarter of 2021 (actual), the fourth quarter of 2021 (expectations).

While mortgage NPL ratios have generally declined further, there are increasing signs of asset quality deterioration across EU countries. In some countries, such as Denmark, Slovakia, Sweden, Iceland, Portugal, Poland, and Norway, housing loans constitute more than 35% of banks' total loans and advances. By contrast, for a few others, such as Austria, Cyprus, Slovenia, Hungary, Croatia, Bulgaria, France and Luxembourg they represent less than 20% of total bank loans (Figure 20). Notwithstanding the impact of the pandemic on economic activity, mortgage-related NPL ratios have generally decreased further, particularly in Iceland, Portugal, Italy, Greece, Cyprus and Slovenia. However, as prudential and fiscal measures have been or are being phased out, a deterioration in asset quality has taken place or may be expected to take place, particularly in those countries which had relatively high shares of mortgage loans under moratoria (Spain, Romania, Italy, Greece, Austria, Cyprus, Slovenia, Hungary³² and Portugal³³), as those loans were presumably concentrated in lower income households, which are employed in sectors most affected by the pandemic³⁴. Some of these countries already have a relatively high stock of NPLs in their portfolio (Figure 21). In addition, the amount of NPLs in the construction and real estate

³² It should be noted that in Hungary the moratorium was automatic and did not require an application to be made. However, borrowers could opt out of the moratorium. The portfolio quality of loans under moratorium might therefore be higher compared with other countries where narrower moratoria were applied to loans with higher credit risk.

³³ According to a survey of seven major banking institutions operating in Portugal conducted by Banco de Portugal, over half of the debtors with loans under moratoria were part of households which did not seem to have experienced a drop in income compared with pre-pandemic levels, at the time they asked for the moratoria. On the other hand, about half of the debtors that took up moratoria worked in the sectors most affected by the pandemic.

³⁴ Loan moratoria measures expired in the first quarter of 2021 in Austria and Slovenia, the second quarter of 2021 for Cyprus and Greece, and the third quarter of 2021 in Spain and Portugal. Loan moratoria are expected to expire in the first quarter of 2022 in Romania and the second quarter of 2022 in Hungary and Italy.



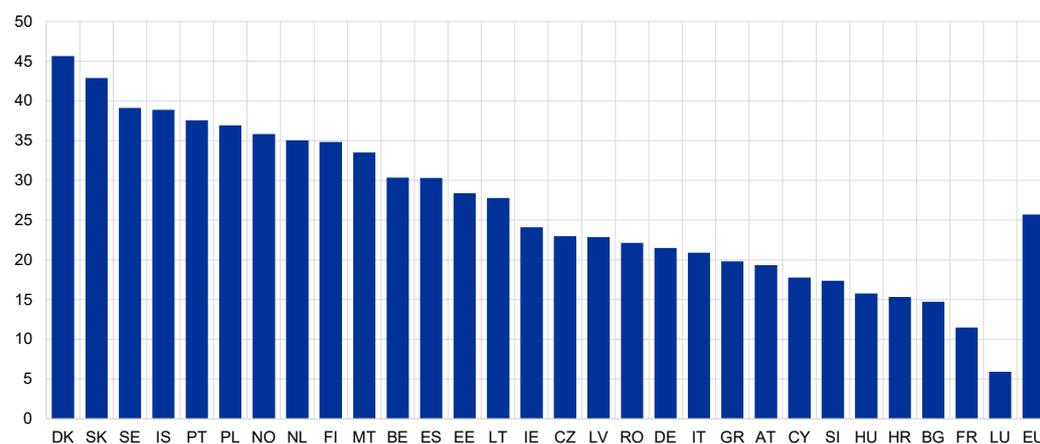
sectors is significantly higher than the amount of NPLs for mortgages in a number of countries, pointing to vulnerabilities in those sectors more generally.

In several countries, banks using internal models have relatively low risk weights and are not subject to a risk-weight floor (the Netherlands, Slovakia, France, Denmark and Portugal in particular, see Figure 22. In addition, in most of these countries risk weights have been declining recently. However, in Portugal, the share of internal ratings-based (IRB) banks is relatively low.

Taking into account the scoreboard plus additional information, the risk related to the funding stretch is assessed to be medium in a majority of EEA countries (Table 2).

Figure 20
Banks' exposures to mortgage loans

(percentage of total loans and advances)



Sources: ECB, EBA.

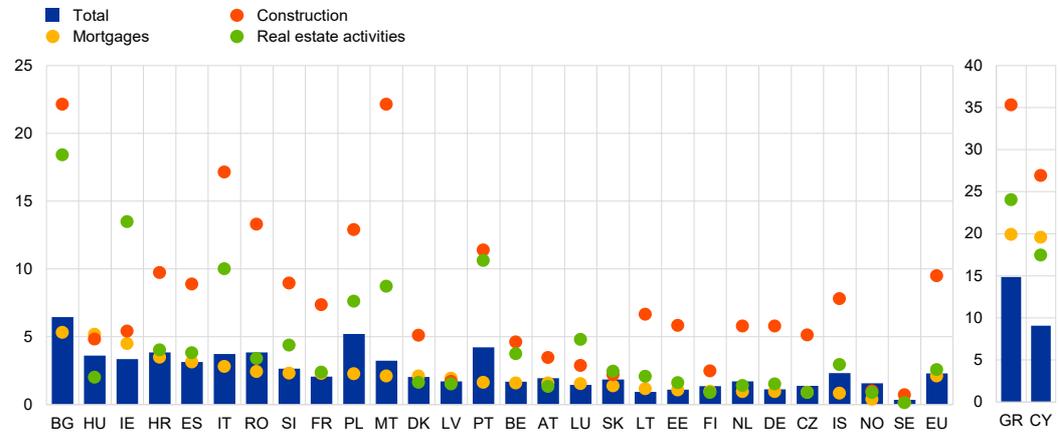
Notes: Figures as of the second quarter of 2021. Individual country data include subsidiaries. For example, at the country level the subsidiary in country X of a bank domiciled in country Y is included in data for both countries X and Y (for the latter as part of the consolidated entity). EU banks' exposure is computed as the simple average.



Figure 21

Banks' NPL ratios for mortgages, construction and real estate activities

(percentage of total loans and advances per sector)



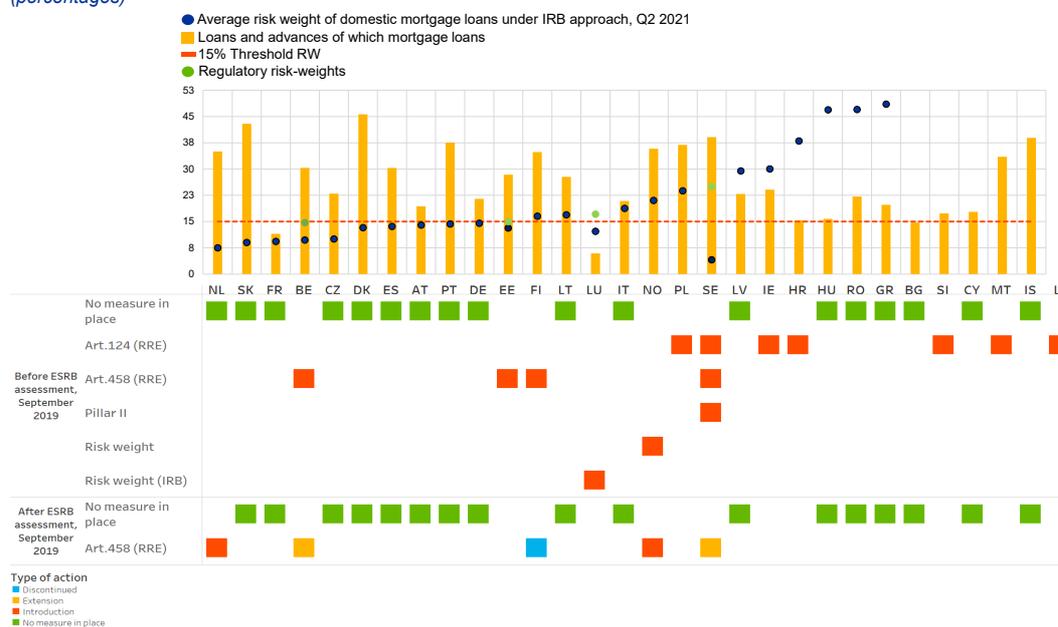
Sources: EBA, ESRB calculations.

Notes: Figures as of the second quarter of 2021, for NO as of the first quarter of 2021. Values for Greece and Cyprus are shown on the left-hand scale, values for all other countries are on the right-hand scale. The data shown in this figure refer to banks only. In the case of DK, taking mortgage credit institutions into account would lead to an NPL ratio of 1.6% for mortgages. Individual country data include subsidiaries, which are excluded from the EU aggregate. For example, at the country level the subsidiary in country X of a bank domiciled in country Y is included in data for both countries X and Y (for the latter as part of the consolidated entity). Internal estimates from the Central Bank of Malta suggest lower NPL ratios without taking into account the subsidiaries, particularly for real estate activities.



Figure 22
Banks' exposure to real estate, IRB risk weights and risk weight policy measures

(percentages)



Sources: ECB (CBD), EBA.

Notes: (i) The last data point is the first quarter of 2021 for risk weights and the second quarter of 2021 for banks' exposures to mortgage loans. (ii) For countries where measures related to IRB risk weight are in place, the numbers reflect the risk weights without such measures. (iii) In the case of DK, taking mortgage credit institutions into account would lead to a significantly higher share of mortgage loans in total loans and advances than shown here, i.e. 51%.

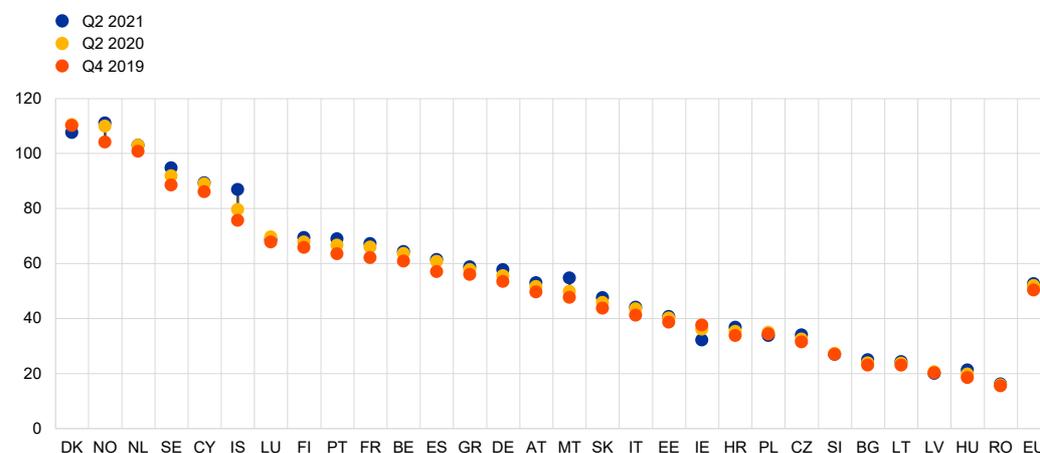
2.3 Household stretch

In almost all EEA countries, household indebtedness started to grow again relative to GDP in 2020 (Figure 23). By the end of 2020, the debt-to-GDP ratios of Denmark, the Netherlands and Norway had risen to over 100%. The ratios were, nevertheless, strongly affected by the pandemic, as GDP declined substantially in 2020 in most countries. The recent increase in the share of household debt to GDP is mainly the result of the strong decline in GDP and only partly of a possible increase in household debt. Some of the countries with the highest household debt-to-GDP ratios, such as Cyprus, Denmark, the Netherlands and Portugal, were on a downward trend before the pandemic but this was not the case of France, Luxembourg, Finland, Sweden and Norway, which had increasing household debt-to-income ratios even before the pandemic. Also, in the case of Iceland, the decline in the ratio had halted in 2017 before starting again in 2020. The economic recovery in 2021 should dampen the pandemic-induced increase in the ratio.



Figure 23
Household indebtedness

(percentage of GDP)



Source: ECB, ESRB calculations.

Note: The last data point is the second quarter of 2021, except from IS (the first quarter of 2021).

Household indebtedness has grown in most countries since the fourth quarter of 2017

(Figure 24). High household indebtedness increases vulnerability to shocks even though it can be cushioned by the availability of financial assets (see Box 3 entitled “Financial wealth in the EU”). Since the fourth quarter of 2017 household indebtedness has risen by more than 10 percentage points in 14 out of the 29 countries in the EEA. Bulgaria, Hungary, Lithuania and Malta have seen an increase of more than 20 percentage points in debt levels, although the first three countries start from relatively lower levels in the EU comparison. Debt levels have risen more, on average, in countries that are still in the early stages of building wealth, although there are some exceptions to this rule, for example France, Luxembourg and Sweden which have overheated RRE markets, something which also shows up in their mortgage markets. Historically low interest rates have kept debt service ratios broadly stable and on a decreasing path in most countries. Still, high debt levels make households vulnerable to loss of income and falling asset prices, which is particularly the case for RRE assets. Significant levels of household indebtedness can generate disruptions if there is an increase in interest rates or a drop in household income, especially when coupled with a deterioration of asset values on household balance sheets. Household defaults result in bank losses, which may be followed by a contraction in credit and GDP growth. The risk of many households restricting their consumption also constitutes a financial stability risk, as this may lead to loan defaults in other sectors as a consequence of an economic slowdown. The real household debt index has decreased for Ireland, Greece, Spain, Cyprus, Latvia and the Netherlands since the fourth quarter of 2017.

Box 3 Financial wealth in the European Union

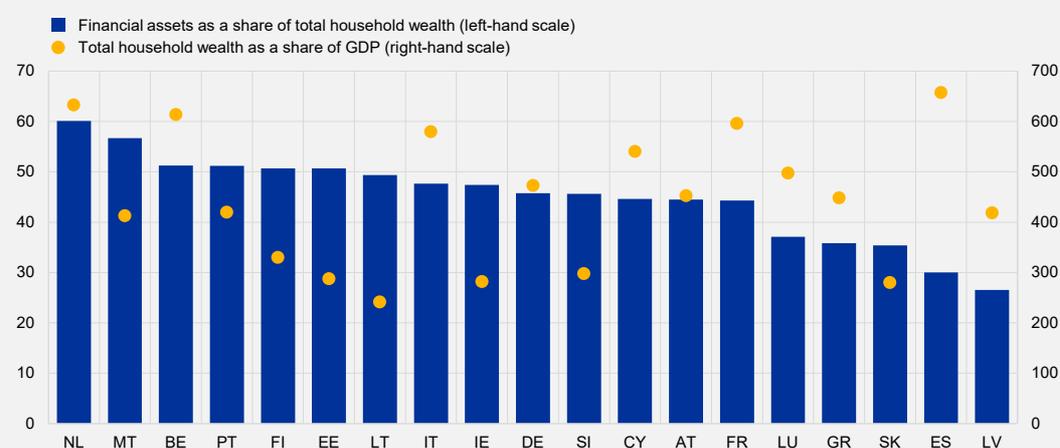
Financial assets constitute an important share of households’ total wealth in EU countries, as they account for between 27% (Latvia) and 60% (the Netherlands) of aggregate household



sector total assets (Figure A). Monitoring changes in households' net financial wealth (financial assets minus financial liabilities), both in terms of composition and value, is therefore particularly relevant from a financial stability point of view for two main reasons: 1) as household consumption is determined not only by income but also by wealth, a widespread reduction in the latter could, all things being equal, induce many households to cut their consumption at the same time, which would represent a financial stability risk³⁵. 2) Financial wealth can offer protection from adverse economic developments, such as a fall in disposable income. Indeed, a low-income household with relatively high net financial wealth is better equipped to withstand loss of income and service its debts than a low-income household with low or even negative net financial wealth.

Figure A
Financial assets as a share of total household wealth in the euro area

(percentage of total household wealth; percentage of 2019 GDP)



Sources: Eurostat, ECB, ESRB calculations.

Notes: Total financial assets of households here is the sum of total financial assets and housing wealth. Statistics on housing wealth are estimated by the ECB, and are available for euro area countries only. Data as of the second quarter of 2021.

Financial asset and debt figures are taken from Eurostat quarterly sector accounts. The financial assets of households are broken down into currency and deposits; equity and investment fund shares; debt securities; loans; insurance; pensions and standardised guarantees; financial derivatives and employee stock options; other accounts receivable/payable (Figure B). In Greece, Cyprus and Slovakia, currency and deposits constitute more than 60% of households' financial assets. Because of the large funded portions of the pension systems in Denmark and the Netherlands, more than 50% of financial assets are held in the form of insurance and pensions. By contrast, households in Bulgaria, Estonia and Lithuania have more than 40% of their wealth invested in equity and investment fund shares. The comparability of the data may be partially hampered by the fact that only second pillar pensions (employment-related schemes) are included

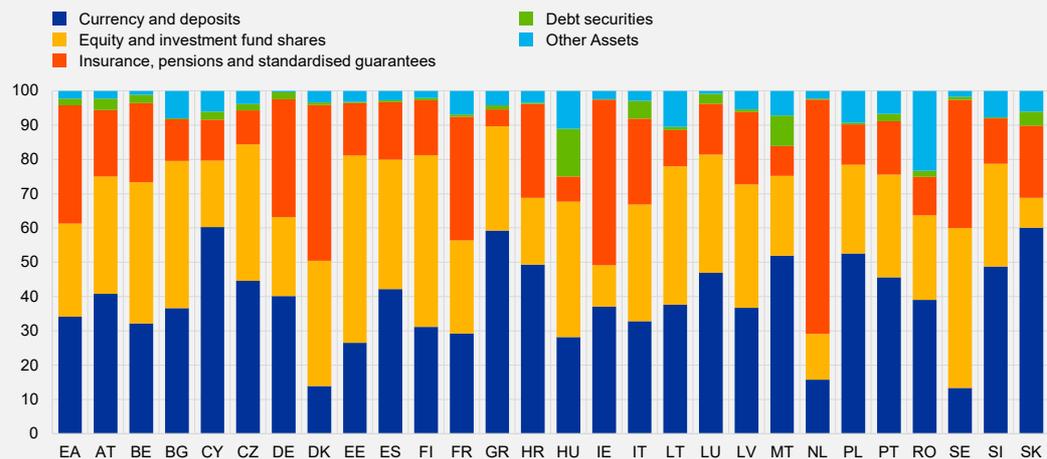
³⁵ Furthermore, research has also been carried out indicating that the marginal propensity to consume financial wealth is significantly higher than it is for housing wealth. See, for example, Guerrieri, C. and Mendicino, C. (2018), "Wealth effects in the euro area", Working Paper Series, No 2157, ECB, June; or Arrondel, L., Lamarche, P. and Savignac, F. (2015), "Wealth effects on consumption across the wealth distribution: empirical evidence", Working Paper Series, No 1817, ECB, June.



rather than first pillar pensions (social security pensions), the importance of which varies across EU countries, reflecting differences in national regulation.

Figure B
Household financial wealth composition

(percentage of total financial wealth)



Sources: Eurostat, ECB, ESRB calculations.

Note: Composition as of the fourth quarter of 2020.

Household net financial wealth levels in EU countries are high overall. The countries with the highest household financial assets to financial liabilities ratios are Hungary, Italy, Bulgaria, Belgium, Latvia, Lithuania, Slovenia, Austria, Malta and Czech Republic, with figures ranging from 581% to 352% as of the end of 2020 (Figure C). Even though household financial wealth is relatively high, if a large share of assets is illiquid, this may limit households' buffers to deal with shocks. While the countries with relatively higher financial assets to liabilities ratios also tend to exhibit relatively higher liquid assets (currencies, deposits, equity, investment fund shares) to liabilities ratios, there are a few exceptions, namely the Netherlands and Ireland. The countries with the highest ratios of net financial wealth to disposable income are Denmark, the Netherlands, Sweden, Belgium, Italy, France, Luxembourg, Ireland, Austria and Germany, with figures ranging from 567% to 240% (Figure D). In those countries, the aggregate household sector is in a better position to deal with loss of income.



Figure C
Ratios of financial assets to financial liabilities

(percentages)

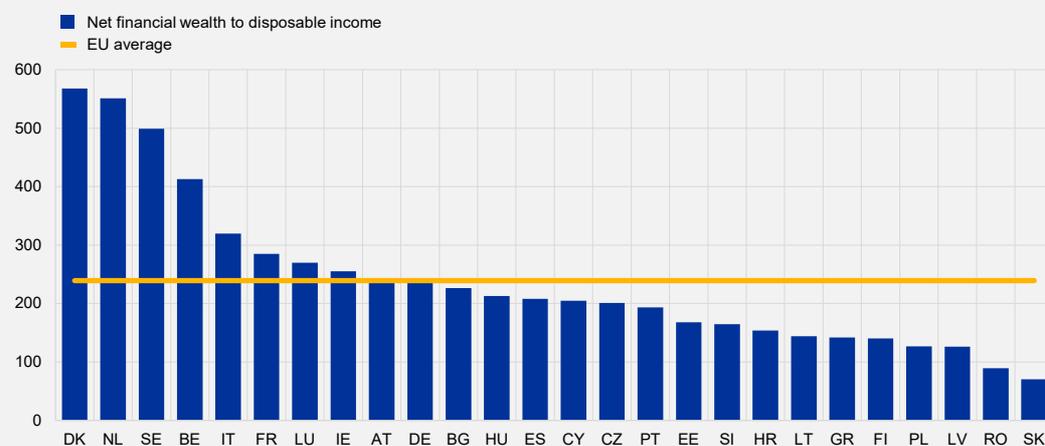


Sources: Eurostat, ECB, ESRB calculations.

Notes: Liquid financial assets include currency, deposits, equity and investment fund shares. Data as of the fourth quarter of 2020.

Figure D
Household net financial wealth to disposable income

(percentages)



Sources: ECB, ESRB calculations.

Note: Data as of the fourth quarter of 2020.

The net financial wealth of the EU household sector has been growing strongly recently. In the median EU country it grew by more than 40% in real terms between 2015 and 2020. The increase in net financial wealth was particularly high in Denmark, Estonia, Ireland, Lithuania and Latvia, with nominal rates of increase ranging between 47% and 94% (Figure E and F). In the majority of countries, the most prominent factors contributing to growth were equities, investment

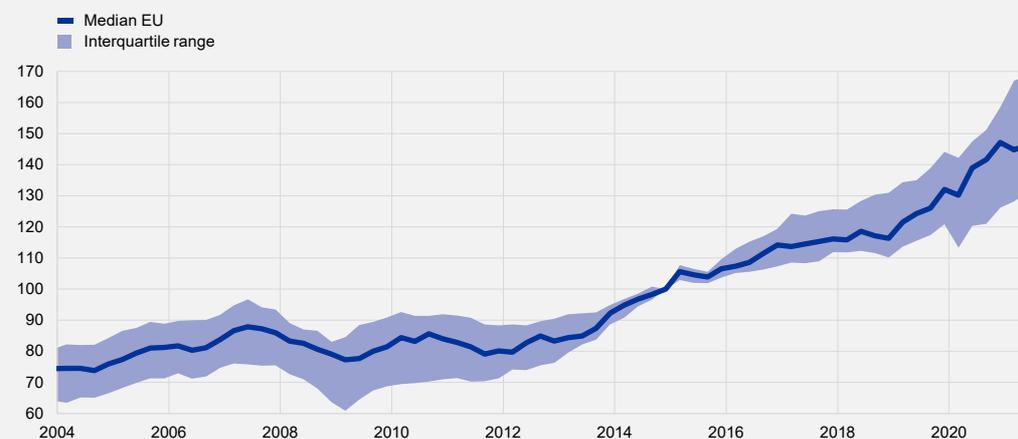


fund shares, currency and deposits. In other countries, factors such as the increase in insurance and pension assets and the reduction in financial liabilities also played an important role. Changes in net wealth are the result of transaction and revaluation effects: in most countries the increase was driven mainly by the former (Figure G). In 2020, the real net financial wealth of households has, generally, continued to increase at a fast pace in all EU countries except for Spain and Bulgaria, given the fact that incomes have remained stable and saving rates have been boosted by pandemic-induced lockdowns. While the amount of wealth held in the form of currency and deposits, equity and fund shares, and insurance and pensions has increased in recent years, households' direct holdings of debt securities have generally trended downwards, partly reflecting a reduction in demand in an environment of low interest rates.

Aggregate country statistics, however, might mask considerable wealth inequalities within the household sector. In some countries (Belgium, France, Germany, Greece, Latvia and Malta) the bottom 20% of households have negative aggregate net wealth (Figure H). In Belgium, Germany, Spain, France, Hungary, Poland and Portugal the top 20% holds more than 50% of aggregate net wealth. The households which already hold higher net wealth are those which may have benefited the most from the general increase in asset prices in recent years. In addition, during the pandemic savings rates may have increased more for wealthy households in relative terms, as they tend to spend more on restaurants, transportation and hotels – sectors particularly affected by the crisis.

Figure E
Household real net financial wealth

(index: Q4 2014 = 100)

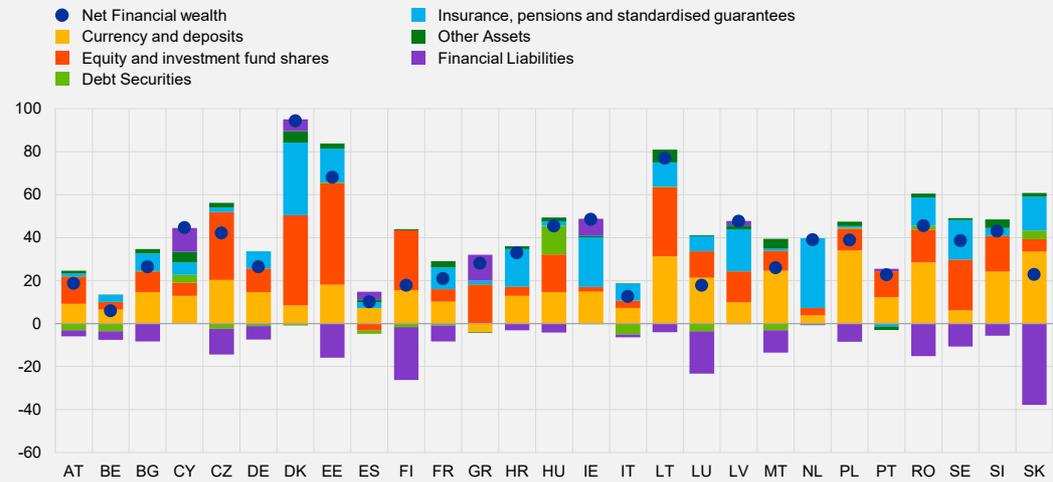


Sources: Eurostat, ECB, ESRB calculations.
Note: The last data point is the second quarter of 2021.



Figure F
Household net financial wealth growth and contributing factors

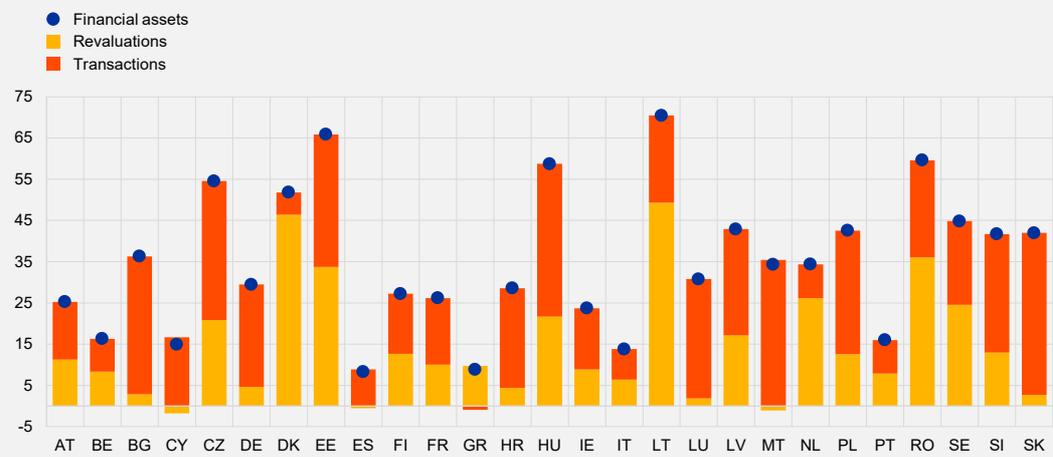
(percentage change over the period Q4 2020 – Q4 2014)



Note: Nominal values.
 Sources: Eurostat, ECB, ESRB calculations.

Figure G
Growth of household financial assets decomposed into revaluations and transactions

(percentage change over the period Q4 2020 – Q4 2014)

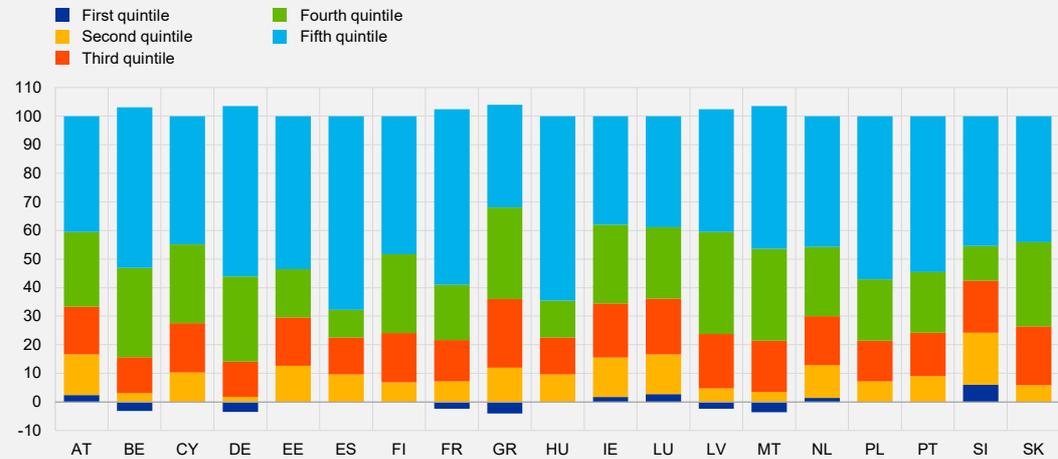


Sources: Eurostat, ECB, ESRB calculations.
 Note: Nominal values.



Figure H
Household net wealth distribution

(percentage of aggregate net wealth)

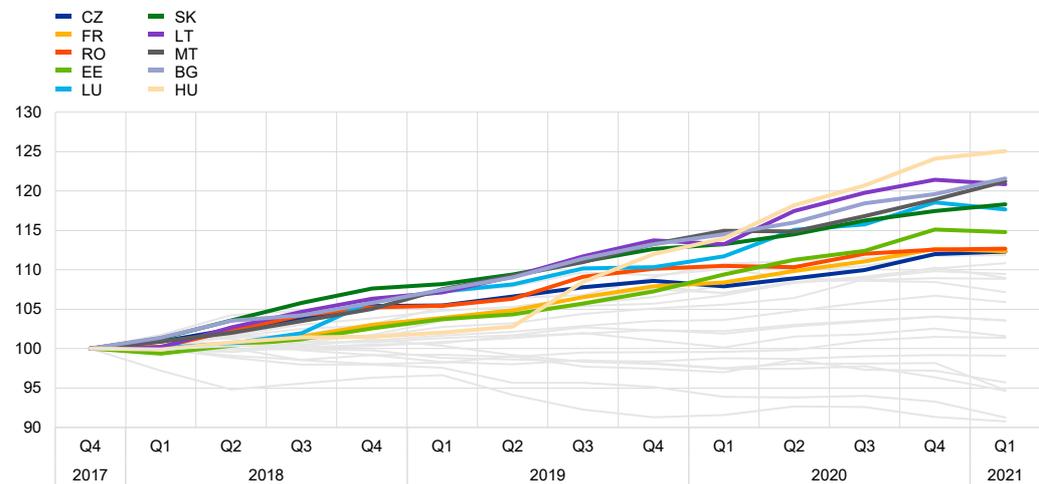


Source: Eurostat.

Notes: Values as of 2015. Data are from Eurostat experimental statistics. For more details, see https://ec.europa.eu/eurostat/databrowser/view/ICW_RES_01/default/table?lang=en.

Figure 24
Real household debt stock

(index: Q4 2017 = 100)



Sources: ECB.

Notes: Only the countries with the highest cumulative growth since the fourth quarter of 2017 are shown in the legend. Last data point as the first quarter of 2021 (with exceptions).

Debt service ratios have remained stable and have even fallen slightly since 2014 (Figure 25). The downward trend in countries' debt service ratios has been partly affected by the low and

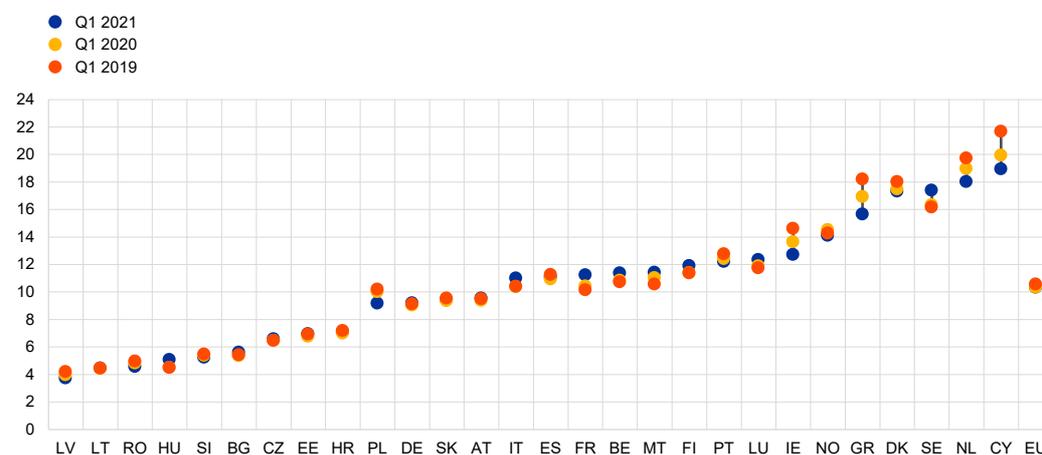


decreasing level of interest rates in the majority of the EEA countries. Only Belgium, France, Italy, Luxembourg, Malta, Finland and Sweden have seen their debt service ratios increase over the past seven years. Five countries (Denmark, Greece, Cyprus, the Netherlands and Sweden), are viewed as high risk with regard to debt service ratios, while for four countries (Ireland, Luxembourg, Portugal and Finland) the risks measured by this indicator are assessed as medium.

Taking into account the scoreboard plus additional information, the risk related to the household stretch is assessed to be high in Denmark, Cyprus, Luxembourg, the Netherlands, Finland, Sweden and Norway, while it is assessed to be medium in Belgium, Estonia, Ireland, Greece, Spain, France, Malta, Portugal, Slovakia, Iceland and Liechtenstein. In the other countries the risk is assessed to be low (Table 2).

Figure 25
Debt service ratios

(percentage of disposable income)



Source: ECB.

Notes: Reference period the first quarter of 2021. EU refers to the simple average across EU countries. The debt-service-to-income ratio is computed according to the methodology proposed by the Bank for International Settlements. Please find more comprehensive information [here](#). As disposable income figures are not available across all EU countries, employee compensation is used as a proxy for disposable income for all countries.

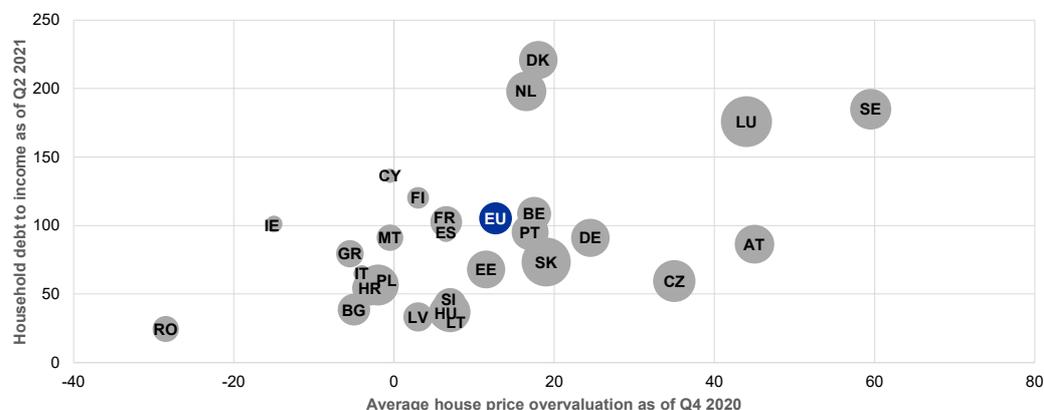
Household indebtedness tends to evolve in line with measures of house price overvaluation in many countries³⁶ (Figure 26). Denmark and the Netherlands deviate from the trend to some extent with their very high levels of indebtedness and moderately low overvaluation. Luxembourg and Sweden have particularly high estimated overvaluation as well as high household indebtedness.

³⁶ Exceptions are countries with a high share of buyers who finance their purchases with their own funds, and a high share of non-resident buyers who finance purchases through loans originated in other countries.



Figure 26
House price overvaluation and household indebtedness

(percentages)



Source: ECB.

Notes: The size of the bubbles reflects the average nominal year-on-year growth in house prices in 2020 and 2021. The latest data point for overvaluation, prices and household debt is the second quarter of 2021 (with some exceptions). For example, the latest available official data point for household debt to income in Malta is the second quarter of 2017. According to internal estimates provided by the Maltese authorities, the ratio is 88.1% as of the second quarter of 2021. The overvaluation figures are estimated by the European Central Bank.

2.4 Structural factors and public policies relevant for the housing sector and mortgage lending

Housing market trends can be impacted by a wide range of factors. Some of these factors are related to cyclical developments related to housing and mortgage demand, leading in turn to cyclical fluctuations in house prices. Other factors, which may be considered to be structural, may be associated with lower volatility in RRE markets, and may either mitigate or amplify the real estate cycle in the medium to long term. Understanding the direction of this mechanism requires a careful understanding of country-specific circumstances.

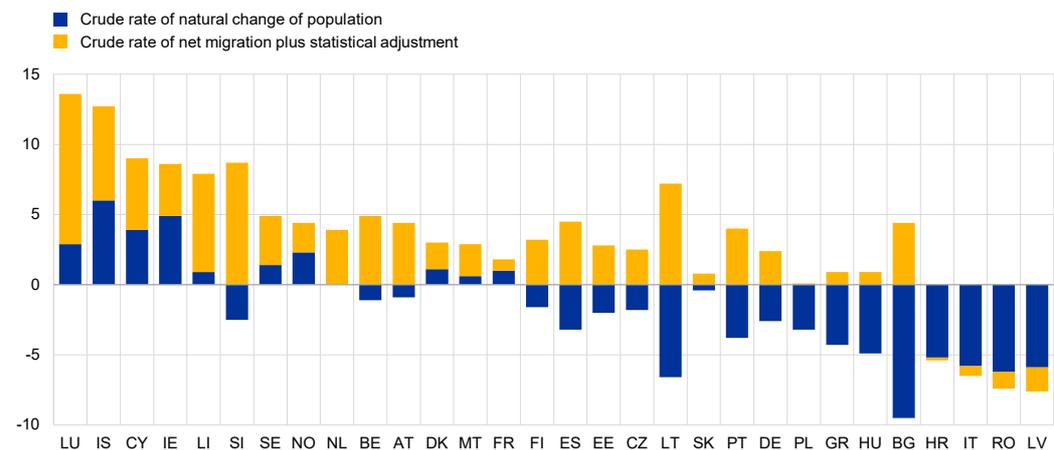
With regard to structural factors, demographic changes such as international and domestic migration or population ageing can shape the demand for housing. Households can also move, either across borders through international migration, or within a country through relocation from, for example, rural to urban areas or smaller to bigger cities (and vice versa, particularly since the onset of COVID-19). The national dispersion of price trends may be explained by these types of developments in some countries. In several European countries net migration has contributed considerably to overall population growth, which has in turn created additional housing demand (Figure 27). The degree to which migrating populations intend to settle in countries will contribute to the cyclical effect of this development on housing demand. House price volatility may therefore increase if large population movements are only temporary. Another demographic change in EU countries, which is relevant for the housing market, is population ageing. This trend can generate a need for smaller dwellings, requiring supply to adjust. Another phenomenon could be demand for



residential property from non-residents, who may purchase a property either for their own use or for investment purposes.

Figure 27
Population growth in 2019

(crude rates)



Source: Eurostat.

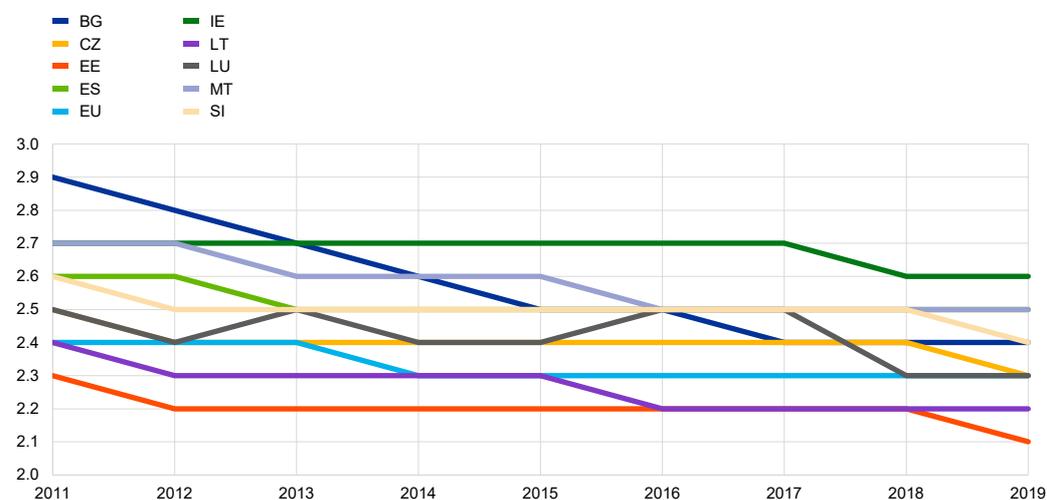
Notes: Values are expressed per 1,000 inhabitants. The crude rate of net migration is equal to the difference between the crude rate of population increase and the crude rate of natural increase (i.e. net migration is considered to be the part of population change not attributable to births and deaths). It is calculated in this way because immigration or emigration flows are either unknown or the figures are not sufficiently precise.

Apart from demographics, changes in various social patterns, such as the share of single-person or divorced households, can also affect the demand for housing. The average size of a household has been decreasing in the EU. Apart from population ageing, changes in social patterns, such as the rising proportion of single-person households or higher divorce rates, can generate a need for smaller dwellings (Figure 28). In turn, house price trends can also shape living habits, as low housing affordability can prevent young people from living independently. The share of young Europeans living with their parents has increased in recent years in the majority of EU Member States.



Figure 28
Average household size

(number of persons)



Source: Eurostat.

Alongside cyclical and structural factors, public policies may play an important role in respect of house prices and household indebtedness. Various policies are in place to facilitate or promote home ownership or to provide security to tenants across EEA countries. Other policies govern new construction of residential real estate or ensure the supply of affordable housing. Depending on their design, different policies may affect house prices and household indebtedness in distinct ways and directions.

In many EEA countries the tax structure is deemed to promote home ownership, in some cases incentivising purchases financed by debt.³⁷ Depending on the jurisdiction, homeowners may be subject to a favourable or an unfavourable capital gains tax, they may be exempted from the implicit “imputed rent tax” and they can apply for mortgage interest tax relief. Over the years this may have raised house prices to high multiples of borrowers’ incomes and household debt to a significant share of countries’ GDP. Moreover, in recent years the tax burden on homeowners has decreased in many countries, something that might have contributed to further increases in household indebtedness (see Box 4 and Figure 29). In some countries, housing taxation can also mitigate or amplify the house price and credit cycles. In particular, property transfer taxes, which are based on the market value of a property, imply a higher tax burden on buyers when house prices are already high. On the one hand, this can have a countercyclical effect on house prices, as the higher tax burden may reduce demand for RRE property.³⁸ On the other hand, however, if the countercyclical effect of transaction taxes on house prices is limited, these taxes may have a procyclical effect on household indebtedness. Changes like the abolition of property transfer taxes

³⁷ European Systemic Risk Board (2020), “**Special Feature D: Residential Real Estate Taxation and Macroprudential Policy**”, *Review of Macroprudential Policy in the EU in 2019*, April.

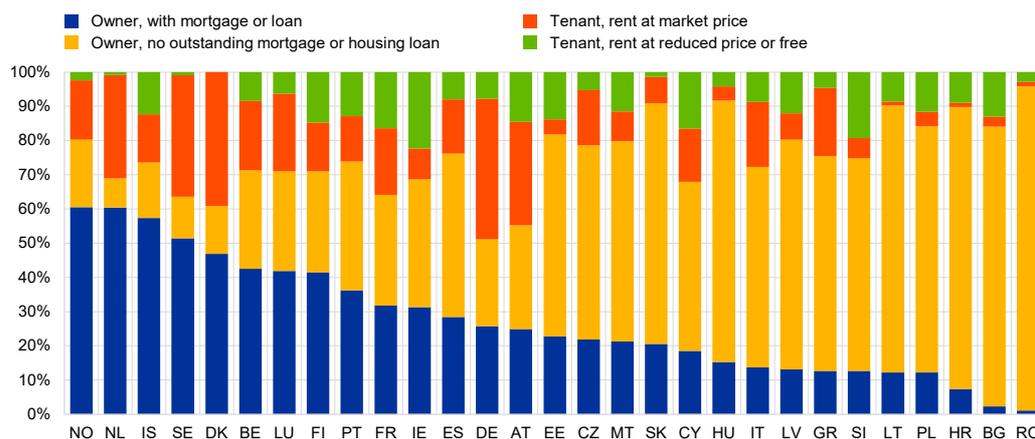
³⁸ See “**Special Feature D: Residential Real Estate Taxation and Macroprudential Policy**”, *Review of Macroprudential Policy in the EU in 2019*, ESRB, April 2020; Martins, V., Turrini, A., Vašíček, B. and Zamfir, M. (2021), “**Euro Area Housing Markets: Trends, Challenges & Policy Responses**”, *Discussion Paper 147*, European Commission.



can contribute to fuelling demand, which could result in further increases in house prices. Moreover, the effect of such a change could be greater if house prices are already rising. In these circumstances the impact of the change may be perceived by other market participants as being driven by fundamentals, reinforcing demand through expectations of further house price increases.

Figure 29
Population by tenure choice

(percentages)



Source: Eurostat.

Notes: Data as of 2019, except for IS (2018). In certain countries a large share of the rental market is regulated (DK, NL). Reduced-rate tenants include (a) those renting social housing, (b) those renting at a reduced rate from an employer and (c) those in accommodation where the actual rent is fixed by law.

Box 4 The user cost of housing

The user cost of (owner-occupied) housing is a concept linked to the affordability of housing. It has been proposed by, for example, Poterba and Sinai (2008), Barrios et al. (2019) and Svensson (2020).³⁹ It can be defined as the annual cost of buying a dwelling at the beginning of a year, paying operating and maintenance costs (OMC) as well as taxes and interest rates during the year, and selling the dwelling at the end of the year, paying any capital gains tax at the end of the year.

The user cost can also be calculated per euro dwelling value, where it may be called the user-cost-of-(housing) capital (UCC) ratio. In line with Poterba and Sinai (2008), Barrios et al. (2019) and Svensson (2020), the UCC ratio can be written as:

³⁹ Poterba, J. and Sinai, T. (2008), "Tax Expenditures for Owner-Occupied Housing: Deductions for Property Taxes and Mortgage Interest and the Exclusion of Imputed Rental Income," *The American Economic Review*, Vol. 98, No 2, pp. 84-89; Barrios, S., Denis, C., Ivaškaitė-Tamošiūnė, V., Reut, A. and Vázquez Torres, E. (2019), "Housing Taxation: A New Database for Europe," *JRC Working Papers on Taxation and Structural Reforms*, No 08/2019, European Commission; Svensson, Lars E.O. (2020), "Macprudential Policy and Household Debt: What is Wrong with Swedish Macprudential Policy?", pp. 111-167.



$$UCC_t = m_t + r_t + \tau_t^p + \beta_t(1 - \tau_t^y) - [(1 - \tau_t^{cg})\pi_{t+1}^{he} - \pi_{t+1}^{HICPe}] \quad (1)$$

The variable m_t denotes the ratio of the operating and maintenance costs to the dwelling price; r_t denotes the real (average) after-tax interest rate; τ_t^p denotes the property tax rate; β_t denotes a before-tax risk premium, representing that the fact that housing may be considered to be a risky investment relative to safe alternatives; τ_t^y denotes the capital-income tax; τ_t^{cg} denotes the nominal capital gains tax rate; π_{t+1}^{he} denotes the owner occupier's expectation in year t of dwelling price inflation in year t + 1; and π_{t+1}^{HICPe} denotes the owner occupier's expectation in year t of HICP inflation in year t + 1. The term in square brackets is the expected rate of real after-tax capital gains, which is entered with a negative sign because it reduces the UCC. The after-tax interest rate is given by

$$r_t = LTV_t(1 - \tau_t^M)i_t + (1 - LTV_t)(1 - \tau_t^y)i_t - \pi_{t+1}^{HICPe} \quad (2)$$

The first term is the LTV-weighted after-tax (relief) mortgage rate and the second term is the equity-to-value-weighted after-tax cost of equity. The before-tax cost of equity is, for the sake of simplicity, assumed to be equal to the before-tax mortgage rate, i_t , whereas the rates of mortgage tax relief, τ_t^M , and capital-income tax, τ_t^y , may differ.

Using the equations above, the contributions of different components to the UCC can be calculated. To quantify the effect of the different variables on the UCC, we omit the last term of equation (1) to exclude the more speculative component of this term, i.e. the expected rate of real after-tax capital gains, which is expected to be zero. We use the Housing Taxation Database from the European Commission with comparable time series on the main features of home ownership taxation and user cost of housing in the EU and the United Kingdom (Barrios et al., 2019; European Commission, 2021⁴⁰). Although in the literature the OMC share has been assumed to be constant (Barrios et al., 2019; Poterba and Sinai, 2008), we allow it to vary over time, as a constant OMC share would imply that OMC (which is the share multiplied by the price of the dwelling) increases with house prices. As a starting value we take the OMC used in Poterba and Sinai, (2008), which is 0.025, and apply the growth rate of the HICP excluding energy and food to reflect the increase in OMC over time. Figure A shows the changes in the UCC and the contributions from the OMC share, real after-tax interest rates, the risk premium and taxes for the six countries that received ESRB recommendations in 2019.

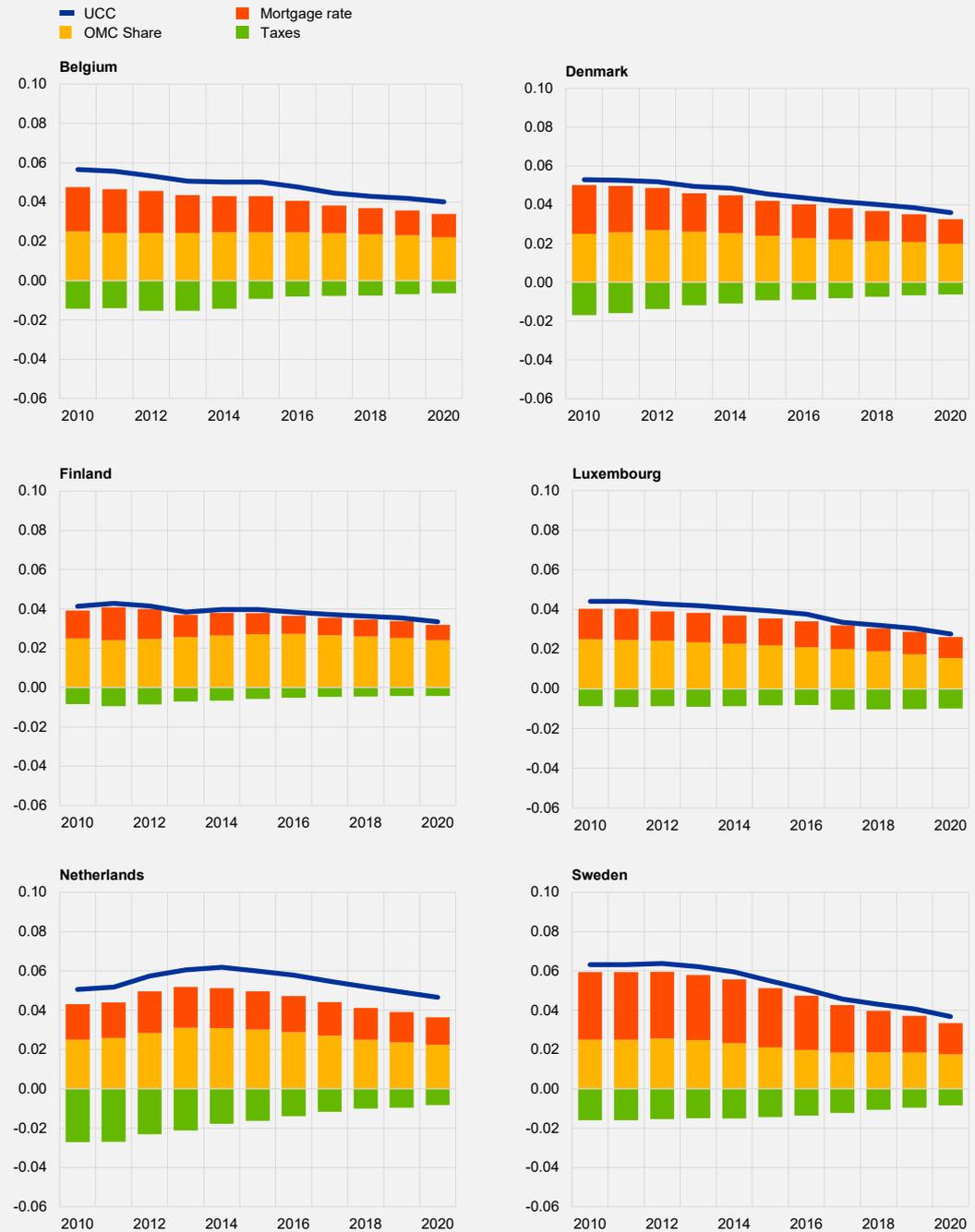
The results show that, since 2010, the UCC has been declining for all countries except the Netherlands, where the fall only started in 2015. The decline was related to a drop in real after-tax interest rates in all countries, with Sweden experiencing by far the strongest effect. The contribution of the OMC share also fell over time for all countries, although less so, with the strongest effect noted for Luxembourg, the Netherlands and Sweden. The change in the contribution of taxes since 2010 has been flat or positive. The risk premium was assumed to have been the same across countries and constant over time and therefore did not contribute to the decline in the UCC.

⁴⁰ European Commission (2021), "Housing Taxation Database".



Figure A

Contribution of the individual components of the UCC



Sources: Data are from the Statistical Data Warehouse, Eurostat and the European Commission Housing Taxation Database. Calculations by the ESRB.

Notes: Taxes refers to the sum of capital income tax, the mortgage tax relief rate and the implicit property tax. The mortgage rate refers to the >5 years rate. Base year is set to 2010. Values are available for 2004-20, except for LU (UCC for 2007-20), NL (UCC for 2005-20) and SE (UCC for 2005-20).



Using the UCC per euro of dwelling as calculated above, the ratio of the user costs per dwelling to income (UCTI) and to rents (UCTR) can easily be calculated to assess how changes in the price-to-income (PTI) or price-to-rent (PTR) indicators differ when taking the UCC into account. These indicators can be written as:

$$UCTI_t = UCC_t PTI_t \quad (3)$$

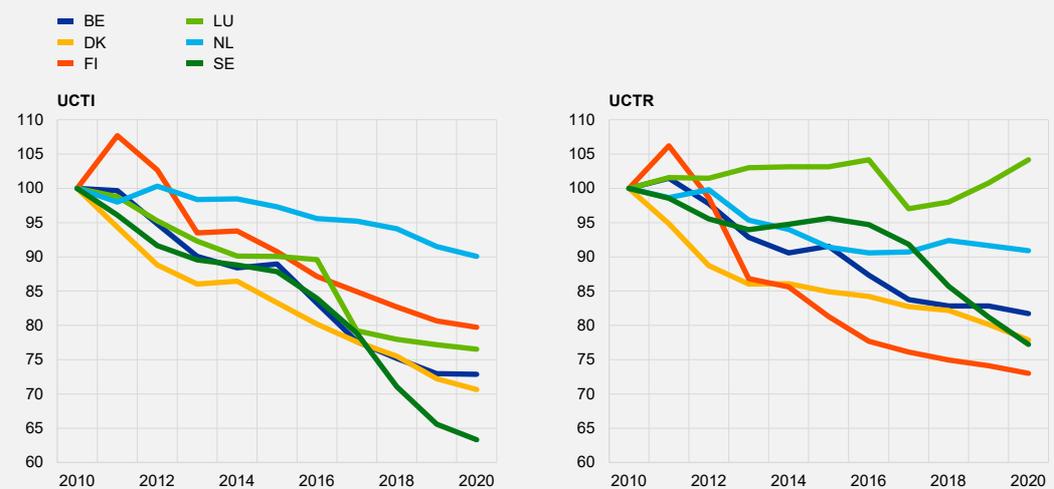
and

$$UCTR_t = UCC_t PTR_t \quad (4)$$

The two indicators are shown in Figure B for the six countries which received recommendations. While the UCTI declines for all countries, the UCTR is flat for Luxembourg and declines for the other countries.

Figure B
The user costs-to-income and user costs-to rents ratios

(percentages, base year set to 2010)



Sources: Data are from the Statistical Data Warehouse, Eurostat and the European Commission Housing Taxation Database. Calculations by the ESRB.

Note: Values are from 2010-20.

A few factors need to be borne in mind when comparing this approach with house price valuation estimates. First, the approach refers to owner-occupied housing. Second, the indicator refers to new loans which, arguably, affect the marginal buyer but not potential stock vulnerabilities. The effect of interest rate changes on the UCTI for the stock of loans is smaller, depending on the interest rate fixation, refinancing and the duration of the fixation of the underlying loans. Third, one additional purpose of the indicator is to compare costs related to owning and renting a property as two alternatives, even though the depth of rental markets differs substantially across countries. Fourth, in line with other indicators, the trend for the UCTI and the UCTR can provide information on changes over time and levels, but as information on their equilibrium values is missing it cannot



be deduced from the analysis above whether house prices are overvalued or undervalued. Given the relatively short sample availability for the indicator it is difficult to make an approximation through its deviation from trend, unlike the more simplistic price-to-income indicator where a longer time series is available and the deviation from trend is used to assess its deviation from some equilibrium value. Finally, the analysis does not include supply factors although these are, however, included in the inverted demand model used in this report.

For financial stability analysis, it remains important to consider simulations of some of the indicators by assuming, for example, different paths for interest rates. Further analysis could be performed at a more disaggregated level.⁴¹ As we saw, the current low interest rate environment is having a strong impact on housing affordability, and an important question is whether or not rates will remain low for long and, thereby, reduce the UCTI going forward.

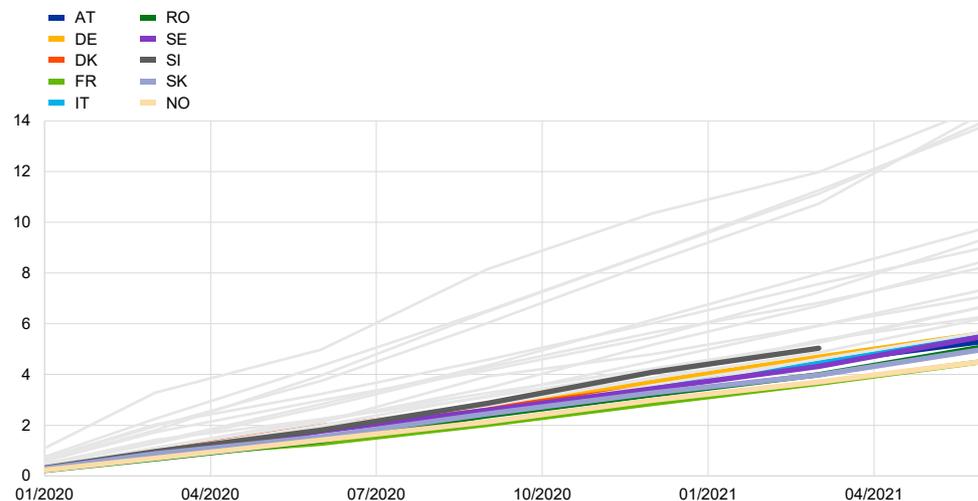
Against a background of a strong preference for home ownership, construction of new residential real estate is often limited in urban areas. Besides the scarcity of land in many countries, and in urban areas in particular, factors including strict urban planning, high quality standards required for new constructions (Ireland), inefficient issuance of building permits (Figure 30) or labour shortages further limit the supply of housing. Moreover, rental market regulation by, for example, rent controls or significant legal protection offered to tenants makes the supply of owner-occupied housing inelastic in some countries (Denmark, Germany, France, the Netherlands, Austria, Sweden and Norway). Recent examples of attempts to narrow the gap between demand and supply include legal changes to the respective laws governing the issuance of building permits (Czech Republic) or a preferential VAT rate offered to developers who finish a property within a given time span (Hungary). On the one hand, a cautious approach to new construction policies is warranted, drawing lessons from past crises when housing oversupply aggravated the downturn in some countries after demand for housing had evaporated. On the other hand, public administrations need to follow long-term demographic and social developments to make sure that supply is “structurally” sufficient.

⁴¹ Svensson (2020) calculates the monthly user cost in SEK of the average owner-occupied studio in Stockholm and finds that it is lower than the rent for a rent-controlled studio



Figure 30
Cumulative building permits issued since 2020

(multiple of the average quarterly building permits issued in 2019 for each country)



Source: Eurostat.

Note: The last data point is the second quarter of 2021 (with some exceptions). The series is not seasonally adjusted.

To increase the affordability of housing, loan support measures are being introduced. Some of these measures can, however, lead to further increases in house prices and household indebtedness. Given the difficulty of increasing the supply of housing, countries are introducing various policies on the demand side to facilitate households' access to housing. These measures range from favourable credit conditions to the provision of loans or financial subsidies. In some countries these measures are targeted at low-income households (including young people or families with children), while in other countries they are fairly broad based. In Hungary or Croatia, for example, the size of a subsidy differs according to the area in which a household wishes to purchase a property. The aim of the measures is to promote less developed or less in-demand areas, something that might also reduce some of the pressure on house prices in urban and other highly sought-after areas. In Hungary and Croatia subsidies are targeted at households with children, thereby supporting the government's efforts to counter population ageing. There are similar incentives in Croatia, where the duration of a subsidy can be extended, depending on the number of children in a household. In any case, demand side measures cannot be viewed as a substitute for increasing the supply of housing. In fact, these measures can actually contribute to fuelling demand, leading to greater overvaluation of house prices and higher household indebtedness (including the most vulnerable households). This is especially the case for policies that are broad based, i.e. available to all households and not only those that would not be able to obtain a loan without the subsidy. For all these reasons, measures like social housing, which aim to increase the supply of housing, are seen as a more appropriate way to increase the affordability of



housing.⁴² Moreover, when implemented during a downturn, they can also act countercyclically by creating more jobs in the construction sector.

Green regulation and technological progress, as well as the pandemic, could change the future trend for house prices and household indebtedness. Green policies could make the construction of new RRE more expensive. At the same time, new technologies like, for example, 3D printing are promising avenues that could alleviate part of the pressure on house prices and related vulnerabilities by simplifying supply chain dynamics and, in the long run, reducing production costs. Finally, both demand and supply in the RRE market could be impacted by potential long-term changes triggered by the pandemic in the commercial real estate market. Provided that the shift from on-site to remote working is, at least to some extent, permanent, a part of commercial real estate (such as offices) might be converted into residential real estate. This could alleviate the pressure on house prices in urban areas and, in particular, in inner cities, where the shortage of supply has been most pronounced. On the other hand, institutional investors who have been focusing mainly on commercial real estate so far could turn to the RRE market in a search for yield, with potential upward effects on house prices.

⁴² Martins, V., Turrini, A., Vašíček, B. and Zamfir, M. (2021), “**Euro Area Housing Markets: Trends, Challenges & Policy Responses**”, *Discussion paper 147*, European Commission, September.



3 Country analysis of risks and policies for a subset of ESRB member countries

While the cross-country analysis gives an overview of vulnerabilities by stretches, the country analysis also looks at the implications of the identified vulnerabilities for financial stability.

The country analysis was performed for 24 countries where the identified vulnerabilities are more pronounced. The selection is based on an analysis of the three stretches analysed above. In particular, a country was selected for the country analysis if it had a high risk level in at least one of the three stretches or a medium risk level in at least two of the stretches in the cross-country analysis. In addition to the countries which received recommendations or warnings in 2019 (Belgium, Czech Republic, Denmark, Germany, France, Luxembourg, the Netherlands, Finland, Sweden, Iceland and Norway), the countries included in the analysis are Bulgaria, Estonia, Ireland, Croatia, Lithuania, Hungary, Malta, Austria, Poland, Portugal, Slovenia, Slovakia and Liechtenstein. The analysis starts with the countries which received recommendations in 2019, followed by countries which received warnings in 2019 (both in Section 4.3). In Section 4.4 all other countries are analysed in alphabetical order.

In addition to a more profound risk analysis, a policy analysis is performed for these 24 countries. The policy assessment starts from the presence of certain risks, which can vary in nature and intensity. In particular, the macroprudential policy mix is assessed to ascertain whether it is appropriate and sufficient to mitigate the identified financial stability risks in countries with significant vulnerabilities.

3.1 Risk analysis

Different combinations of vulnerabilities may indicate different types of risk to financial stability, depending on the transmission channels.

- **Direct risks** are related to potential losses incurred by lenders from mortgage portfolios in the event of negative economic developments. These risks tend to be associated with an overvaluation of house prices, loose mortgage lending standards and household indebtedness.
- **Indirect risks** are related to potential adjustments in household consumption in the event of negative economic developments, with second-round effects on the real economy and financial stability. These risks are associated with household indebtedness, and while they do not necessarily materialise due to housing loan defaults, they may affect financial stability through defaults on other loans as a consequence of an economic downturn.

As a part of the country analysis, the overall risk focuses primarily on stock vulnerabilities, although it also takes flow vulnerabilities into account. Countries which exhibit accumulated (stock) RRE vulnerabilities and risks are mostly classified as high or medium-risk countries for the



purposes of this assessment. If countries exhibit rapidly growing (flow) RRE vulnerabilities and risks, but the level of their vulnerabilities and their risks to financial stability are not yet viewed as significant, they are considered to be medium-risk.

In 2019, countries which received ESRB warnings or recommendations were characterised by high or medium stock vulnerabilities, coupled with significant flow vulnerabilities. High stock vulnerabilities were identified in Denmark, Luxembourg, the Netherlands, Sweden and Norway, mostly reflecting the high indebtedness of households which might be vulnerable to negative economic shocks. In other countries, namely Belgium, Czech Republic, Germany, France, Finland and Iceland, stock vulnerabilities were identified as medium, mostly as a result of household indebtedness and/or an overvaluation of house prices and, to a certain extent, relaxed lending standards over the past few years. Moreover, in all these countries vulnerabilities were increasing significantly, either as a result of an absence of borrower-based measures (Germany and, partially, Finland), their relatively recent introduction (Belgium, France and Luxembourg), or as a consequence of borrower-based measures not being sufficiently tight (the Netherlands) against a backdrop of increasing house prices and household indebtedness.

In 2020, and in the first half of 2021, stock vulnerabilities persisted at the same or at higher levels in all countries which were part of the country analysis. At the same time, the probability of credit risks materialising has increased in all countries, and especially those with exposure to the tourism industry (Croatia, Malta, Portugal and Iceland) or other sectors that had been severely impacted by the pandemic, although there are differences across countries as to how severe the shock was, depending on progress with vaccinations.

With regard to flow vulnerabilities, the pandemic has resulted in a two-way development across the countries which are part of the country analysis. In most EEA countries, the growth of flow vulnerabilities continued and even accelerated, despite the economic downturn and uncertainty regarding the outlook. This also concerns several countries in which vulnerabilities have been considered high for several years, and where one might therefore assume that house prices and/or household indebtedness would not increase significantly in relation to economic fundamentals (e.g. Denmark, Luxembourg, the Netherlands, Sweden and Norway). In other countries flow vulnerabilities have been adding to the continuing low stock vulnerabilities, causing a gradual increase (e.g. Czech Republic, Germany and Portugal). This has mainly been the result of an overvaluation of house prices, while indebtedness has not been a major issue in most of these countries. In some countries borrower-based measures were preventing a potential deterioration in lending standards and further growth in vulnerabilities (e.g. Czech Republic and Portugal). In a few other countries vulnerabilities stopped increasing after the onset of the pandemic (e.g. Spain).

Flow vulnerabilities have resulted in new countries being identified in which vulnerabilities must be monitored very carefully. This concerns a few countries in particular, in which borrower-based measures have so far been missing (Belgium and Croatia, where an implicit DSTI limit is, however, in place).

Overall, of the countries which received ESRB recommendations or warnings in 2019, five countries were assessed as having high vulnerabilities related to the RRE market, while for six countries the vulnerabilities were assessed as medium (Table 3). Of the remaining EEA



countries, based on the analysis thirteen countries were identified as having medium vulnerabilities (Table 4).

Table 3

Risk analysis of countries which received ESRB recommendations and warnings in 2019

Country	Stock risks	Flow risks	Overall risk assessment
BE	medium	high	medium
CZ	medium	high	medium
DE	medium	high	medium
DK	high	high	high
FI	medium	medium	medium
FR	medium	medium	medium
IS	medium	medium	medium
LU	high	high	high
NL	high	high	high
NO	high	medium	high
SE	high	high	high

Source: ESRB assessment.

Table 4

Risk analysis of selected EEA countries

Country	Stock risks	Flow risks	Overall risk assessment
AT	medium	high	medium
BG	low	high	medium
EE	medium	high	medium
HR	low	high	medium
HU	low	high	medium
IE	medium	medium	medium
LI	medium	medium	medium
LT	low	high	medium
MT	medium	high	medium
PL	medium	medium	medium
PT	medium	high	medium
SI	low	high	medium
SK	medium	high	medium

Source: ESRB assessment.



3.2 Policy assessment

A policy assessment was conducted for countries in which risks had been assessed as at least medium. To this end, the stock and flow vulnerabilities were considered to be equally important.

Macroprudential policy appropriateness is evaluated in accordance with the nature and level of the identified vulnerabilities and the position of the country in the real estate cycle. The presence of accumulated stock vulnerabilities may indicate a need for capital-based instruments. On the other hand, if flow vulnerabilities have been building up, borrower-based measures are typically considered more appropriate. As countries may exhibit a combination of stock and flow vulnerabilities, a comprehensive macroprudential response may be needed in order to ensure its effectiveness. While the position of the countries in the RRE cycle is one of the important indicators used to decide on the appropriate policy mix, the position in the economic cycle is equally important, especially at the moment when both cycles are evolving differently.

Policy sufficiency is assessed based on the ability of macroprudential measures to mitigate the identified vulnerabilities while taking the benefits and costs of these measures into account. Nevertheless, assessing policy sufficiency is particularly challenging, given the heterogeneous approach national authorities take to calibrating and evaluating measures. The analysis therefore reflects current international best practices and is a practical evaluation of the data and self-assessment provided by the national authorities. The work on the macroprudential stance has recently contributed to the evaluation and is expected to play a more prominent role in the future, once the concept has been fully operationalised (see Box 5). At the same time, the assessment of policy sufficiency is conditional on the level of policy appropriateness. If the policy is assessed as not fully appropriate it is automatically assessed as not fully sufficient since vulnerabilities are expected to continue building up.

Box 5

ESRB work on assessing macroprudential stance

Macroprudential stance is a conceptual framework used to compare systemic risks and policy measures at the country level. After establishing the theoretical framework used to model and assess the macroprudential stance⁴³, the ESRB moved on to the operational phase. Three quantitative approaches were designed and implemented: 1. a growth-at-risk approach; 2. a semi-structural approach for the banking sector; and 3. an indicator-based approach, with two sectoral applications, one to borrower-based measures for real estate and another to capital-based measures. For the purposes of the current report, the indicator-based approach applied to borrower-based measures for real estate is preferred. According to the definition established in the theoretical paper, macroprudential stance is defined in net terms as the difference between risk and resilience on the one hand, and policy on the other. It represents a measure of policymakers' willingness to tolerate residual risk in the economy and the financial system. This model therefore makes it possible to investigate and understand the evolution of risk, resilience and policy factors for each Member State. The selection of variables and their categorisation across stretches relies

⁴³ For a detailed description of the approaches see European Systemic Risk Board (2019), **Features of a macroprudential stance: initial considerations**, April.



extensively on the WG-REM methodology⁴⁴ implemented by the ESRB to analyse RRE markets. The model employs 17 variables across the collateral, funding, household, spillover and policy stretches.⁴⁵ Through a four-step process, a subset of the bucketed original variables are aggregated to obtain the metrics for residual risk (i.e. risk adjusted for resilience) across two segments – collateral and funding – which are then compared with applicable policy measures. The overall stance is eventually obtained as a weighted sum of the loan-to-value (LTV) and the debt service-to-income (DSTI) stance.

The results of these models are shown on a heatmap, making it possible to visually identify countries with a tight or a loose stance, and through a set of four figures for each Member State. The figures display information about the overall stance and its high-level components, but they also disentangle the low-level components of residual risk for both collateral and funding segments. Models used to assess macroprudential stance will become part of the analytical toolkit used by the ESRB to monitor financial stability across Europe and to identify risk and vulnerabilities across Member States. The datasets and the code used to perform the calculations will be shared with national authorities.

Countries which received ESRB recommendations in 2019 were advised to activate capital-based and/or borrower-based measures, and also to take other action related to the legal frameworks for borrower-based measures and policies that went beyond macroprudential policy. In particular, Denmark and the Netherlands were advised to introduce or tighten capital-based measures, while borrower-based measures were recommended to Belgium, Luxembourg, the Netherlands, Finland and also – subject to the result of regular risk monitoring – to Denmark and Sweden. Luxembourg was also advised to establish a legal framework for borrower-based measures, while Finland was advised to complement such a framework with income-related instruments. The Netherlands was advised to address governance issues related to the introduction of borrower-based measures by strengthening the accountability of the government with respect to the recommendations of the macroprudential authority. Several countries, namely Denmark, Luxembourg, the Netherlands and Sweden, were also advised to introduce changes, such as tax or rental market policies, beyond macroprudential policy, in order to eliminate upward pressure on house prices and/or incentives for households to become overindebted. Similarly, countries received ESRB warnings in 2019 if they showed vulnerabilities which were considered not to have been addressed by policy measures.

Before the onset of the pandemic, a few countries managed to act on the ESRB recommendations and warnings (Table 5). The impact of the pandemic started to make itself felt in spring 2020, meaning that countries had roughly half a year to reconsider their policy stance

⁴⁴ For a detailed description of the approaches refer to European Systemic Risk Board, [Report of the Expert Group on Macroprudential Stance - Phase II \(implementation\)](#).

⁴⁵ The list of variables represents a common starting point for measuring and communicating risk and resilience in the economy. The variables in the collateral and funding stretches represent key risk indicators such as, for example, RRE price growth and mortgage credit growth respectively. On the other hand, the variables in the household stretch such as, for example, household sector DTI, represent resilience indicators. The spillover stretch reflects the sectoral systemic importance of the real estate sector in the overall economy and the financial system. The policy stretch provides a numerical representation of the sectoral policy environment. In the case of residential real estate the policy stretch consists of LTV and DSTI limits, or their equivalents, for a standardised loan. For a more detailed description of the methodology employed, see European Systemic Risk Board, [Report of the Expert Group on Macroprudential Stance - Phase II \(implementation\)](#).



following the adoption of the ESRB recommendations and warnings. In fact, some countries took appropriate policy action. Belgium and France introduced a set of borrower-based measures, while Luxembourg adopted a legal framework for borrower-based measures. The Netherlands also initiated the process of increasing risk weights for IRB RRE exposures through Article 458 of the Capital Requirements Regulation (CRR)⁴⁶ which was, in fact, suspended during the pandemic, although it will be implemented from January 2022.

Table 5
Macroprudential policy actions in countries which received ESRB recommendations and warnings in 2019

Status	Type of measure	Measure	Country													
			BE	CZ	DE	DK	FI	FR	IS	LU	NL	NO	SE			
Before ESRB assessment, September 2019	BBM	Amort. req		R									LB		LB	
		DSTI		R								LB		LB		
		DTI		R										LB		
		LTV		R					LB			LB		LB	LB	
		Maturity limit		R								LB		LB		
		Speed limit												LB		
		Stress test		R				R						LB	R	
	CBM	CCyB														
		SyRB														
	Other RW	Other														
Art. 458 (RRE) RW req																
After ESRB assessment, September 2019	BBM	Amort. req													LB	
		DSTI	R	LB						LB					LB	
		DTI	R	LB											LB	
		LTV	R	LB					LB						LB	
		Maturity limit									LB				LB	
		Speed limit													LB	
		Stress test													LB	
	CBM	CCyB														
		SyRB														
	RW	Art. 458 (RRE)														

Type of action
■ Abolished
■ Extension
■ Introduction
■ Recalibration
■ Relaxation
■ Tightening

Source: ESRB.

Notes: "R" stands for recommendation, while "LB" stands for legally binding. Details of macroprudential policy measures are discussed in the country sections. Note that in March 2020 De Nederlandsche Bank announced its intention to implement a neutral CCyB of 2% in the Netherlands. This will be introduced when economic and financial circumstances have normalised.

After the onset of the pandemic, countries which had received ESRB recommendations and warnings in 2019 reacted quite differently (Table 5).

In anticipation of an economic downturn, Czech Republic loosened or discontinued individual borrower-based measures in April 2020 and again in July of that year. Finland loosened LTV limits, while the Netherlands also discontinued the process it was following to activate a measure, under Article 458 of the CRR, to increase IRB risk

⁴⁶ Regulation (EU) No 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012 (OJ L 176, 27.6.2013, p. 1).



weights for RRE exposures⁴⁷. In some countries, borrower-based measures were only loosened temporarily to ensure the provision of credit at the beginning of the crisis or to allow households to withstand temporary loss of income without suffering any deterioration in their liquidity position (Sweden and Norway). Also, all countries (except Luxembourg) which had positive CCyB rates released these buffers either entirely (Belgium, Denmark, Germany, France, Sweden and Iceland) or to a significant extent (Czech Republic and Norway). While Belgium and Sweden decided to extend the measures under Article 458 of the CRR, which kept risk weights for IRB RRE exposures at higher levels, Finland decided to discontinue a similar measure, which had had limited impact over the previous months.

In some other EEA countries, macroprudential policy actions were characterised by a tightening of borrower-based measures before the onset of the pandemic, followed by the release of capital buffers thereafter (Table 6). In some countries in which RRE vulnerabilities and risks were assessed as high or medium in 2019, there was already a comprehensive set of measures in place so the ESRB did not issue recommendations or warnings to such countries. Nevertheless, a few of them further tightened the calibration of their macroprudential measures subject to the monitoring and assessment of vulnerabilities before the pandemic (Portugal and Slovakia). By contrast, in some countries borrower-based measures were loosened temporarily (Malta, Portugal and Slovenia). Following the onset of the pandemic, all the other countries in which the CCyB rate had been positive either partially (Belgium and Slovakia) or fully (Lithuania) released it. In some cases, the SyRB was also discontinued (Estonia, Hungary and Poland).

Some countries which had loosened their macroprudential measures following the onset of the pandemic decided to tighten or (re-)introduce the measures in 2021. In particular, Finland tightened LTV limits again, Iceland tightened LTV limits, even in comparison with pre-pandemic levels, and Lithuania sought to increase down payment requirements for second-time and subsequent buyers. Iceland introduced a new DSTI limit. Czech Republic decided to tighten the LTV limit and to reintroduce DSTI and DTI limits. To this end, it used new legally binding powers that had been granted to it earlier in 2021. In some countries capital-based measures have been or are being reconsidered. Czech Republic,⁴⁸ Denmark, Sweden, Iceland and Norway have decided to increase the CCyB in 2022, while Lithuania will introduce a sectoral SyRB for RRE exposures. In Denmark, the Systemic Risk Council advised the government to introduce a new amortisation-related borrower-based measure. The government, however, decided not to follow this recommendation.

⁴⁷ The measure will be activated as of January 2022.

⁴⁸ In the Czech Republic, the CCyB has been fully rebuilt compared with pre-pandemic levels.



Table 6

Macprudential policy actions in selected EEA countries

Status	Type of Measure	Measure	Country															
			AT	BG	HR	EE	HU	IE	LI	LT	MT	PL	PT	SI	SK			
Before ESRB assessment, September 2019	BBM	Amort. req									LB						LB	
		DSTI	R			LB	LB				LB	LB	R	R	R		LB	
		DTI																LB
	RW	LTV				LB	LB		LB	LB	LB	LB	R	R	R		LB	
		Maturity limit	R			LB					LB	LB	R	R	R		LB	
		Stress test							R		R							
CBM	CCyB																	
	SyRB																	
After ESRB assessment, September 2019	BBM	Art. 458 (RRE) RW req																
		DSTI																
LTV																		
CBM	Maturity limit																	
	CCyB																	
	SyRB																	
RW	Art. 458 (RRE) RW req																	
	Art. 458 (RRE) RW req																	

- Type of action
- Abolished
 - Extension
 - Introduction
 - Recalibration
 - Relaxation

Source: ESRB.

Notes: "R" stands for recommendation, while "LB" stands for legally binding. Details of macroprudential policy measures are discussed in the country sections.

Going forward, countries with accumulated vulnerabilities should ensure they preserve capital until risks materialise or they should consider (re-)introducing capital-based measures whenever the economic recovery is on solid ground.

This concerns both countries with high stock vulnerabilities (Denmark, Luxembourg, the Netherlands, Sweden and Norway), as well as countries in which stock vulnerabilities are lower but have been increasing for quite some time (Belgium, Denmark, Germany, Ireland, France, Hungary, Malta, Austria, Poland, Portugal, Slovenia, Slovakia and Iceland). Several countries have relatively low IRB risk weights (Denmark, France, the Netherlands, Portugal and Slovakia). In addition, risk weights have been declining over the last few quarters in most of these countries. The Netherlands has already announced that it will activate a risk-weight floor from January 2022 onwards. Other countries (Denmark and also, if vulnerabilities increase further, France, Portugal⁴⁹ and Slovakia) should consider addressing the issue either by using a sectoral SyRB for RRE exposures or by increasing risk weights. Some other countries may also consider increasing the resilience of credit providers via capital buffers once the economic recovery is well rooted. Depending on overall economic performance, countries may consider acting through a sectoral SyRB for RRE exposures in order to target risks related to these exposures and to avoid any negative effects of broad-based capital-based macroprudential measures on other types of lending.

⁴⁹ Note that the weight of IRB banks in Austria and Portugal is low relative to the EU average.



Countries in which already-accumulated vulnerabilities have increased further should consider (re-)introducing or further tightening borrower-based measures.

In Germany, the need to introduce further borrower-based measures into the legal framework or activate measures that are already available has been increasing in line with growing overvaluation. However, newly available data do not imply a strong and broad-based loosening of lending standards over the past few years. In Austria, borrower-based measures should take a legally binding form in order to ensure greater effectiveness. Both countries should consider introducing or activating capital-based measures to address vulnerabilities that might have accumulated in the absence of borrower-based measures (Germany) or over the period during which borrower-based measures were not fully complied with (Austria). Slovakia should adjust the framework for borrower-based measures to address emerging pockets of vulnerable borrowers. Finland and Liechtenstein should also complement the LTV limit with at least one income-related instrument. The Netherlands, where borrower-based measures were considered too loose from a long-term perspective, should consider tightening such measures. Finally, Denmark and Sweden, where the tightening of borrower-based measures was recommended by the ESRB in 2019 subject to the results obtained from the monitoring of vulnerabilities, should also consider tightening as vulnerabilities have clearly increased in the meantime. Moreover, Denmark should introduce some of the measures in a legally binding form to complement the current consumer protection measures, which follow a comply-or-explain mechanism.

Depending on the dynamics of vulnerabilities going forward, borrower-based measures may also need to be recalibrated or added to in other countries.

In Belgium and Estonia, the share of new loans which are granted with high LTV values relative to the vulnerabilities identified (in particular the estimated overvaluation of house prices) warrants monitoring. If the vulnerabilities related to house price growth continue to increase, these countries may need to consider tightening LTV limits or limiting the use of exemptions (for example, Estonia could recalibrate the exemption from LTV limits for government-sponsored loans).

Countries in which flow vulnerabilities have been emerging recently should introduce borrower-based measures in order to counter the accumulation of risks.

In Bulgaria and Croatia, overvaluation and household indebtedness are not considerable, but the relaxed lending standards together with house price and household credit dynamics could give rise to a rapid accumulation of vulnerabilities and risks. Past lessons from other countries have shown how important it is to act against this build-up through the early activation of borrower-based measures. For this reason Bulgaria and Croatia have been invited to introduce LTV limits, possibly coupled with either DSTI and maturity limits, or DTI limits, in order to limit vulnerabilities related to the overvaluation of house prices and increasing household indebtedness.

Over the last few years, frameworks for borrower-based measures have been completed in some of the countries where they had been lacking.

Nevertheless, legal or governance issues persist in a number of economies in relation to such measures. On the one hand, legal frameworks for borrower-based measures were established in Bulgaria and Luxembourg in 2019, in Croatia in 2020 and in the Czech Republic in 2021. On the other hand, in Finland, the proposal to extend the toolkit so that it would also contain income-related instruments, was initially postponed from 2020 to 2021. After that, the Ministry of Finance announced that it would not propose extending the toolkit with a DTI limit, even though a number of other measures, such as maturity limits, might be



proposed. In other countries, authorities with a macroprudential mandate lack the powers necessary to apply borrower-based measures (Belgium, Denmark and the Netherlands), or the activation of the measures is conditional on the detection of systemic risks which may be hard to quantify, thus hindering timely intervention (Denmark and Austria). Belgium and Austria have borrower-based measures in place as a recommendation, even though legally binding powers are available in these countries. While in Belgium there has not been much time to assess the effectiveness of such recommendations, in Austria the results of the compliance assessment suggest that the measures should be converted into legally binding provisions.

Countries should carefully consider the effect of any policy measures which go beyond macroprudential policy. When house prices are increasing countries may be tempted to introduce various support measures in order to help low-income households or families with children obtain their own property. Nevertheless, the effectiveness of these measures may decline over time, as the subsidies might gradually cause house prices to rise because of an increase in demand. As a result, house prices may end up being even more overvalued and households (including vulnerable households) more indebted. Similarly, lowering taxes on RRE property may have unintended consequences, depending on the phase of the RRE cycle. In particular, lowering taxes during a period of buoyant house price growth may result in additional increases in house prices, as the difference may feed into prices. Moreover, such an increase may be observed by market participants as being supported by fundamentals and may reinforce appreciation on the back of such expectations. Instead, countries may need to focus on the supply side of the housing market, ensuring that it corresponds to demand, while also taking the regional dimension into account. At the same time, however, it is important to ascertain whether demand is driven by fundamental long-term factors or purely by investment objectives which may be short-lived. This will ensure there is no excess of supply in the market once the economy turns around, which would have a negative impact on house prices and financial stability.

In specific cases, capital-based measures, and especially SyRBs or higher IRB risk weights, may be considered instead of tightening borrower-based measures. In Portugal, for instance, only a part of recent house purchases are financed by domestic credit and price increases may have been driven by non-resident buyers. Borrower-based measures may therefore not be fully effective if a substantial part of housing transactions are executed without recourse to domestic credit. Secondly, such measures could inflict additional unwarranted costs on borrowers who face overvalued house prices partly as a result of foreign demand characterised by greater purchasing power. Tightening borrower-based measures may, therefore, further reduce residents' access to credit and housing, while not mitigating the sources of vulnerabilities effectively. Instead, capital-based measures may be more appropriate for Portugal if the vulnerabilities related to new mortgage loans continue to increase once the economic recovery is on a strong footing.

Any policy action should be effective in addressing RRE vulnerabilities while aiming to avoid procyclical effects on the real economy and the financial system. Capital buffers should be (re)built in line with the economic recovery. Sectoral SyRBs might also replace the CCyB if credit growth is not spread across sectors, thereby targeting RRE risks more efficiently. With regard to borrower-based measures, the (re-)introduction or tightening of LTV limits may be well worth considering where house prices are increasingly overvalued. Income-related instruments automatically become more stringent when household incomes deteriorate. Nevertheless, under



the current circumstances in which household incomes in many countries have been supported by fiscal measures, a careful assessment is needed of whether current income levels will be sustainable after the fiscal measures have been phased out. In the case of positive income developments which are not justified by economic fundamentals, the (re-)introduction or tightening of income-related instruments should be considered.

Overall, in five countries which received ESRB recommendations or warnings in 2019, the policy was assessed as appropriate and sufficient to mitigate the vulnerabilities identified in this analysis (Table 7). In two of the countries the policy was assessed as appropriate and partially sufficient, while in four countries the policy was assessed as partially appropriate and partially sufficient. Of the rest of the EEA countries analysed in this report, the policy in seven countries was identified as appropriate and sufficient, while in five countries it was considered to be only partially appropriate and partially sufficient and in one country as appropriate and partially sufficient (Table 8).

Table 7
Policy assessment of countries which received the ESRB recommendations and warnings in 2019

Country	Appropriateness	Sufficiency
BE	Appropriate	Sufficient
CZ	Appropriate	Sufficient
DE	Partially appropriate	Partially sufficient
DK	Partially appropriate	Partially sufficient
FI	Partially appropriate	Partially sufficient
FR	Appropriate	Sufficient
IS	Appropriate	Sufficient
LU	Partially appropriate	Partially sufficient
NL	Appropriate	Partially sufficient
NO	Appropriate	Sufficient
SE	Appropriate	Partially sufficient

Source: ESRB assessment.



Table 8

Policy assessment of selected EEA countries

Country	Appropriateness	Sufficiency
AT	Partially appropriate	Partially sufficient
BG	Partially appropriate	Partially sufficient
EE	Appropriate	Sufficient
HR	Partially appropriate	Partially sufficient
HU	Partially appropriate	Partially sufficient
IE	Appropriate	Sufficient
LI	Partially appropriate	Partially sufficient
LT	Appropriate	Sufficient
MT	Appropriate	Sufficient
PL	Appropriate	Sufficient
PT	Appropriate	Sufficient
SI	Appropriate	Sufficient
SK	Appropriate	Partially sufficient

Source: ESRB assessment.

3.3 Member States that received ESRB recommendations or warnings over RRE vulnerabilities

3.3.1 Belgium

Summary

Cyclical position of the housing market:
Mature expansion

Policy appropriateness:
Appropriate

Risk assessment:
Medium risk

Policy sufficiency:
Sufficient

Key vulnerabilities:

Signs of house price overvaluation, elevated house price growth, elevated and rising household indebtedness, moderate housing credit growth, loose though improving credit standards for both outstanding and new flows of loans

Description of vulnerabilities

There are still signs of house price overvaluation. According to Nationale Bank van België/Banque Nationale de Belgique (NBB/BNB)⁵⁰, RRE prices were overvalued by about 14% in

⁵⁰ See the Nationale Bank van België/Banque Nationale de Belgique **Financial stability report**, May 2021.



2020, which is more or less in line with the ECB's estimations, after having been undervalued according to the latter model in 2019. This relates partly to the abolition of the tax deductibility of mortgage loans ("housing bonuses") in the Flanders region in January 2020, which led to some front-loading of housing transactions at the end of 2019. Moreover, the house price-to-income ratio was significantly above the long-term average. Annual growth rates for real house prices accelerated further, rising from less than 4% on average in 2019 to almost 6% in 2020 and 8% in the first half of 2021.⁵¹

Since 2019, growth in lending to households for house purchases has been strong. Including securitisations, the real growth in credit granted to households for house purchases stood at 4.8% as of March 2021 (over the last 12 months)⁵². Note that a part of the mortgage loan growth at the end of 2019 was due to the front-loading of house purchases ahead of the abolition of the tax deductibility of mortgage loans in Flanders. In addition, a slight increase in the share of buy-to-let mortgages was observed in 2020. In March 2021, 0.42% of total loans and 0.3% of households were still under moratoria.

The latest developments in lending standards are showing some signs of improvement.

Lending standards were tighter in 2020 and in the first half of 2021 than they had been in 2019, according to information from NBB/BNB, and there was a marked decrease for loans with an LTV ratio of above 90%. Nevertheless, in the first half of 2021 roughly 25% of new loans to first-time buyers had LTV values of over 90% (compared with 5% for buy-to-let buyers and 9% for other owner-occupiers), and another 36% of new loans to these buyers had LTV values of between 80% and 90% (compared with 7% for buy-to-let buyers and 21% for other owner-occupiers). Moreover, 20% of existing loans were originally granted with LTV values of over 90% but with a DSTI at origination of over 30%.⁵³ Overall, the NBB/BNB's expectations have, to a great extent, been respected in terms of LTV values, with the exception of a certain share of buy-to-let loans (even though the deviations have – to a very great extent – been assessed as sufficiently explained through the application of the foreseen comply-or-explain mechanism). The share of loans with a DSTI at or higher than 50% has decreased slightly, falling from 20% in 2019 and 2020 to 18% in the first half of 2021. Lending margins are still below the EU average, indicating a high level of competition between the banks.

Household indebtedness has continued to increase, reaching 106.8% of income in 2020, which is 2 percentage points higher than it was in 2019. In response to the pandemic, a loan moratorium was introduced. At end-September 2020, the volume of mortgage loans covered by that moratorium peaked at 6.4%. As of January 2021, the share of such loans was close to zero.

Policy mix

- LTV/DSTI/DTI: expectations of internal management of mortgage credit standards, introducing LTV-thresholds for various sub-segments of loans, limits to loans combining a high LTV ratio

⁵¹ In nominal terms, house prices grew by 5.8% in 2020.

⁵² Figures adjusted for sales and securitisation.

⁵³ See the Nationale Bank van België/Banque Nationale de Belgique **Financial stability report**, May 2021.



(above 90%) and another risk indicator (i.e. the DSTI ratio above 50% or the DTI ratio above 9%) since 1 January 2020.

- Monitoring framework for credit standards, consisting of a semi-annual survey collecting hard data on lending standards and other parameters of the Belgian mortgage market portfolios of banks and insurers, as well as an informal communication channel to ensure that banks maintain sound lending standards.
- Article 458: risk weight add-on with two components: 1) risk weight add-on of 5 percentage points for the IRB banks' retail exposures secured by real estate; 2) risk-sensitive risk weight add-on, calculated as a share (33%) of the average microprudential risk weight on the (residential) mortgage portfolio. This measure was first activated on 1 May 2018 and was extended in 2021 until 30 April 2022.
- CCyB: the CCyB was increased to 0.5% in June 2019 and reduced to 0% in April 2020 owing to the pandemic.

Policy assessment

The current policy mix is considered to be appropriate and sufficient. The Article 458 measure has been assessed as appropriate for addressing the vulnerabilities related to the overvaluation of house prices, the stock of loans and household indebtedness. The measure has been well complemented by the recently activated supervisory expectations of the NBB/BNB with regard to the internal management of Belgian mortgage credit standards, which are intended to counter a further build-up of vulnerabilities. These expectations seem to be effective, given that in 2020 and the first half of 2021 the risk profile of new mortgage loans improved markedly in all targeted subsegments. As a consequence, the percentage of new loans with an LTV ratio of above 90% fell from 33% in 2019 to 19% in 2020 and 14% in the first half of 2021. At the end of April, individual financial institutions were made subject to a comply-or explain procedure.

Nevertheless, if vulnerabilities continue to increase a tightening of the LTV limit may be warranted. Once the economic recovery is on solid ground it will be necessary to rebuild capital buffers, either by increasing the CCyB once again and/or by applying a sectoral SyRB. The ESRB acknowledges and welcomes the communication of the NBB/BNB of its policy to retain the capital accumulated in accordance with Article 458 of the CRR unless there is a materialisation of the risks this capital was built to address. To retain the capital, the NBB/BNB would also replace the Article 458 measure by a suitably calibrated sectoral SyRB once the measure has expired.



3.3.2 Denmark

Summary

Cyclical position of the housing market: Mature expansion	Policy appropriateness: Partially appropriate
Risk assessment: High risk	Policy sufficiency: Partially sufficient
Key vulnerabilities High and accelerating house price growth, signs of house price overvaluation, high household indebtedness, large (and increasing) share of loans with deferred amortisation of outstanding loans, interconnectedness with the Nordic banking system	

Description of vulnerabilities

Real house price growth has recently picked up in Denmark, especially in Copenhagen. Data suggest that price growth accelerated throughout 2020 and 2021, after a previous deceleration from the peak reached in 2016. This holds in particular for Copenhagen where, according to the national authorities, house prices increased by 14.4% in the first quarter of 2021, compared with 11.8% for the country as a whole. RRE prices have therefore proven to be resilient during the pandemic. The deviation of the house price-to-income ratio from its long-term average suggests that house prices in Denmark were overvalued by about 16% on average in 2020. At the same time, the national authorities consider house prices to be overvalued in Copenhagen and roughly on par with fundamentals in the rest of the country as a whole. However, recent developments may have pushed up house price overvaluation still further. Lately, soaring house prices have been accompanied by record levels of trading activity and very low housing supply, close to the levels seen in 2006. However, over the summer of 2021 trading activity and house price growth seemed to have cooled off slightly. The highly regulated rental market in Denmark may have contributed to recent price growth by creating shortages in the supply of rental housing. In addition, in 2001 the Danish authorities abolished the housing taxation system that had linked the tax amount payable to the current market value of a dwelling, which led to strong RRE price growth and contributed to the overvaluation. A new law to re-establish this type of property tax is planned for 2025 and is expected to have a dampening effect on prices which have departed from the fundamentals, especially in urban areas. In addition, the government is expected to implement measures to increase the supply of social housing that would reduce identified structural vulnerabilities going forward.

Credit growth has remained moderate which, however, should be seen in the light of already-high household indebtedness. The stock of MFIs' loans to households for house purchases has grown slightly – the real year-on-year growth rate was 0.5% in August 2021. In and around the larger urban areas, mortgage credit growth has exceeded disposable income growth for more than five years.

The RRE is of systemic importance to the Danish banking sector, as housing loans make up around 50% of banks' total assets and there is also high interconnectedness with the Nordic banking sector. Nordic banks are financing cross-border housing markets and therefore represent



a source of vulnerability to downturns in regional housing markets. Furthermore, mortgage credit institutions (MCIs) fund household mortgages by issuing covered bonds, which are held by banks, insurance companies, pension funds and foreign institutional investors (who have, in particular, bought fixed-rate 30-year bonds). Given the strong reliance on market-based funding and the direct link to housing markets, the high share of foreign investors may make MCIs vulnerable to changing global investor sentiment, particularly if the housing market were to enter a downturn. While lending standards in 2020 have remained broadly in line with those of 2019, there is an increasing share of newly granted loans in the form of interest-only loans and loans with riskier⁵⁴ characteristics, particularly in large cities. Indeed, according to the national authorities one in three new loans granted in Greater Copenhagen and Aarhus were considered to be risky in the second quarter of 2021 (up from one in four in the fourth quarter of 2019). Indeed, the share of newly granted mortgages with a high DTI ratio in combination with a high LTV ratio is rising. Furthermore, the continued widespread use of deferred amortisation is exacerbating risks related to the already-high household indebtedness in Denmark.

Household indebtedness is still the main source of vulnerability in Denmark. While household debt to income has been steadily decreasing since the third quarter of 2017, it is still one of the highest in the EU (223.5% in the first quarter of 2021). In relation to GDP, the level of household debt is over 100%. Household overindebtedness is also the result of generous rules on interest rate tax deductibility for mortgages, even though this is less relevant in the current low interest rate environment. Notwithstanding the extensive welfare system in Denmark, high household indebtedness may have an adverse effect on the RRE market through a reduction in consumption in the case of financial shocks. This vulnerability is amplified by the large share of loans with deferred amortisation which, in the current interest rate environment, allows households to take on very high levels of debt relative to their income. Even though there has been a minor increase in the share of amortising loans, this trend reversed again in 2020 and a significant part of loans are still interest-only with variable interest rates (almost 30% as of October 2020, in addition to around 10% of loans which are interest-only but with a fixed interest rate). So far, notwithstanding the COVID-19 shock, however, government compensation schemes and favourable labour market developments have buoyed household incomes, and disposable income has increased. The disbursement of holiday pay funds in the spring provides an additional boost to activity.

Policy mix

- LTV: minimum down payment requirement of 5%.
- DTI: wealth requirement at loan origination linked to DTI in larger cities: new borrowers in "growth areas" with a DTI above 4 (5) should have sufficient wealth so that net wealth remains positive if house prices drop by 10% (25%).
- DTI/LTV: mortgage product restriction linked to DTI and LTV: new borrowers with a DTI above 4 and LTV above 60% should have an interest rate fixation period of at least five years and can only obtain deferred amortisation if the interest rate fixation period is thirty years.

⁵⁴ By riskier loans here we mean fixed-rate mortgages without amortisation but with a DTI > 400% and an LTV > 60%. These loans are not formally classified as risky according to the current macroprudential regulations in Denmark.



- Supervisory diamond for mortgage banks – package of microprudential measures with macroprudential effects targeting characteristics of the stock of mortgage loans.
- CCyB: the CCyB was increased to 2% in October 2019 with effect from December 2020. The CCyB rate was reduced to 0% in March 2020 owing to the pandemic. Following the Systemic Risk Council's recommendation, in June 2021 the government decided to reactivate the countercyclical buffer at a rate of 1% from 30 September 2022.

Policy assessment

The current policy measures are assessed as being partially appropriate and partially sufficient. Household indebtedness is still the highest in the EU and the second highest in the EEA, and should be carefully monitored. The decision to raise the countercyclical capital buffer to 1% from 30 September 2022 is welcome and could be followed by a further increase if the economic recovery continues. Given the increasing share of non-amortising loans and loans with high LTV and DTI values, however, new borrower-based measures would be needed to appropriately and sufficiently address the corresponding vulnerabilities related to the new mortgage loans. While there are currently measures in place which introduce qualitative requirements for new loans with deferred amortisation and high DTI values, these were implemented through consumer protection regulation. The measures follow a comply-or-explain mechanism and, even though they were introduced with a financial stability objective in mind, consumer protection has to be taken into account when the measures are recalibrated. Given the increasing intensity of the vulnerabilities related to the new mortgage loans, the measures may not, therefore, be fully appropriate for addressing the vulnerabilities.

In June 2021, the Systemic Risk Council advised the government to introduce a new legally binding borrower-based measure aimed at restricting borrowers' access to interest-only mortgage loans. The restrictions suggested by the Systemic Risk Council were expected to limit the extent to which households could leverage themselves up when both short-term and long-term interest rates were very low. Since the non-amortising loans constitute a high share of new lending with a high LTV, the introduction of stricter lending rules on interest-only loans was expected to lead to a lower share of high LTV loans in general. However, in the end the Danish government did not implement the suggested measures, arguing that the housing market was about to stabilise, and that Danish households' finances were robust. There are therefore vulnerabilities related to household indebtedness and non-amortising loans which remain unaddressed. While the introduction of measures to address these remaining vulnerabilities should be reconsidered, if the vulnerabilities keep increasing the national authorities may also need to consider whether or not to introduce stricter LTV limits for amortising loans. Once the economic recovery is on solid ground capital buffers should be rebuilt, either by increasing the CCyB or replacing it by a sectoral SyRB. Moreover, average risk weights applied to mortgage loans by credit institutions appear to be low, particularly when taking into account recent price developments, which have further increased overvaluation estimates. A risk-weight floor for IRB banks should therefore be considered.

In the meantime, there is also a need to continue considering further policy actions beyond macroprudential measures to address the underlying factors which have contributed to the build-up of these vulnerabilities. Several changes have already been discussed. First, there



have been initiatives to give more powers to the municipalities in order to increase the supply of social housing. Second, an adjustment to the tax regime, which would link the amount of tax payable to the market value of a property, was postponed until 2025. These policies, and other policies addressing structural weaknesses in the Danish housing market, would be welcome.

3.3.3 Finland

Summary

Cyclical position of the housing market: Mature expansion	Policy appropriateness: Partially appropriate
Risk assessment: Medium risk	Policy sufficiency: Partially sufficient
Key vulnerabilities Elevated and rising household indebtedness, high growth in indirect real estate lending to households through housing company loans, easing of lending standards for new loans, interconnectedness with the Nordic banking system	

Description of vulnerabilities

Household indebtedness has continued to increase in Finland. Household indebtedness has continued to increase relative to income, reaching 118% in the fourth quarter of 2020 from a level of 114% one year earlier, while the household financial assets-to-debt ratio has only increased slightly since the beginning of 2020. Given these developments, authorities clarified that a legislative proposal focusing on limiting the use of leverage (by including LTC limits that apply to all borrowers and lenders, as well as maturity limits, but not including DTI/DSTI limits) is being finalised and is going to be presented for public consultation at the end of 2021, before submission to the Parliament. While nominal household loans for house purchases grew at a moderate pace of 4.1% year-on-year in the second quarter of 2021⁵⁵, total lending to households increased by 3.7% over the same period, which was slower than the growth in loans to housing companies (4.0%)⁵⁶. Even though growth in direct mortgage lending by banks has been moderate, there is a concern that the accumulation of household debt is also being channelled indirectly through housing company loans (notwithstanding the fact that housing companies still represent a relatively low share of overall RRE credit). Another phenomenon of concern related to household indebtedness is that the supply of consumer credit has expanded, and there are worries that in some cases consumer credit may also be used to address mortgage payments. Further vulnerabilities stem from the fact that the Finnish banking sector is highly concentrated, interconnected with the other Nordic banking sectors, and funded mostly through markets.

Lending standards have seen some deterioration and large housing company loans are a source of vulnerability. As the Finnish authorities eased loan-to-collateral (LTC) requirements in

⁵⁵ Figure adjusted for sales and securitisation.

⁵⁶ Loans taken out by housing companies, which are paid back in practice by households holding the shares of these companies.

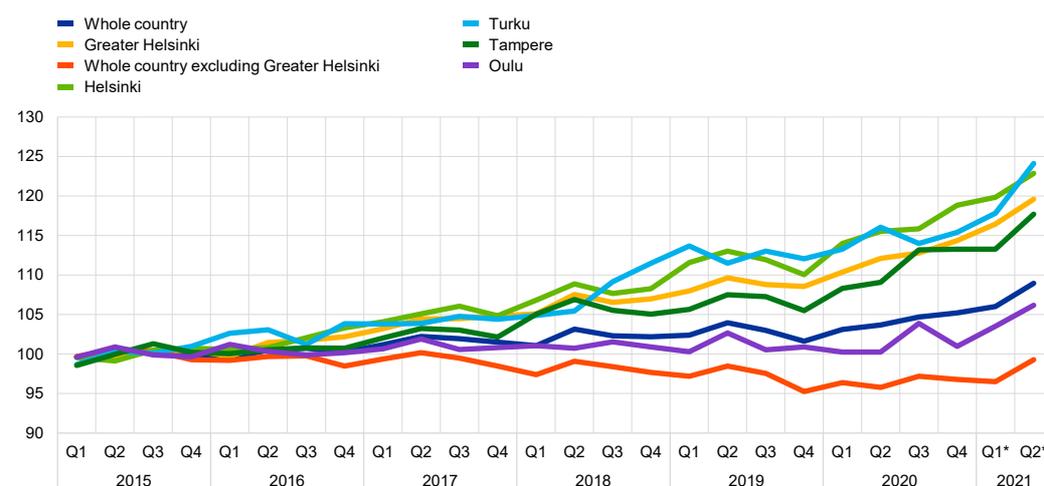


June 2020, the share of new non-first-home loans with an LTC higher than 85% increased to levels seen before this measure was tightened. Mortgages in Finland are fully amortising and have relatively short maturities in comparison with some other countries. However, in recent years the average maturity has increased slightly to 21 years, owing to the increase in longer-maturity loans (loans with maturities of at least 24 years). For housing company loans, maturities have shortened and are, on average, the same length as those of mortgages granted to households. Nevertheless, large housing company loans and long amortisation-free periods right at the start of the loan period have become common, especially for new apartments, while the construction of apartments has accelerated in recent years. This may in itself encourage households to take on debt. For new properties, loans via a housing company can make up most of the debt-free price of apartments, which creates incentives for investors to buy properties of this type. It may also drive up prices and reduce the supply of smaller apartments, in particular, in sought-after locations for buy-to-live and first-home purposes. In comparison with other EEA countries, average lending margins seem narrow for direct mortgages and have stood at around 0.7% for the past few years. In response to the pandemic, banks have been considering, on a case-by-case basis, loan moratoria consisting mostly of interest-only periods. As of end-August 2021, loans which had been subject to these loan renegotiations represented about 2% of the total stock of loans to households.

Real house prices in Finland have remained broadly unchanged, while prices have risen in Helsinki and other larger cities since 2019. House price valuation measures are close to their long-term values, and as such they are not showing any general evidence of overvaluation. Nevertheless, there are clearly two separate trend patterns, with prices decreasing in most of the country but increasing in some urban areas such as the Helsinki metropolitan area and other major cities (Figure 31).

Figure 31
Nominal price index of old dwellings in housing companies

(index: 2015=100)



Source: Statistics Finland.

Notes: The last data point is the second quarter of 2021. The numbers for 2021 are preliminary.



Tax incentives for household home purchases via mortgage interest rate tax deductibility are being removed step by step. Nevertheless, tax relief systems for properties used for investment purposes are still in place in Finland, as in some cases the debt-servicing costs of loans via housing companies related to buy-to-let housing are deductible from the investor's taxable income.

Policy mix

- LTC: for non-first-home buyers, during the pandemic the Board of the Financial Supervisory Authority (FIN-FSA) relaxed the limit to 90%. On 1 October 2021 the cap was restored to 85%, the pre-pandemic level.
- Stress test: borrowers are stress tested to assess their ability to service the debt if the mortgage rate is 6% and the debt has a maturity of 25 years; also takes into account housing company loans.
- SyRB: 1-3% depending on the institution and applied at a consolidated level. Full release of the SyRB rate due to the pandemic on 6 April 2020.
- Article 458: 15% minimum level for the average risk weight on residential mortgage loans of IRB credit institutions. Introduced in January 2018 and extended in June 2019 until 31 December 2020. On 30 September 2020, FIN-FSA decided not to extend the measure beyond 31 December 2020.

Policy assessment

The current policy measures are assessed as being partially appropriate and partially sufficient. By the beginning of 2022, there is expected to be a public consultation on the draft amendment to the legal framework, which would extend the applicability of the LTV limits to other lender types and expand the toolkit to include maturity limits and other restrictions on housing company loans. However, with the aim of addressing the vulnerabilities, in line with the ESRB recommendation the Finnish legislators should complement the framework for legally binding borrower-based measures by adding income-related instruments. In order to address the further build-up of vulnerabilities appropriately and sufficiently, the national authorities should also then activate at least one of these additional income-related measures. Before such measures are available in the legal framework, the authorities should consider adopting further non-legally binding measures. The ESRB welcomes the information received from the FIN-FSA that they plan to issue a recommendation on the application of non-legally binding limits for DTI or, alternatively, DSTI during the first half of 2022, even though it has not yet been decided how the measures will be calibrated. In the meantime, the recent tightening of the LTC limit back to pre-pandemic levels is welcome. Regarding the Article 458 measure for IRB risk weights, which was discontinued in 2020, the ESRB takes note that the measure had limited impact in the last few months it was in place, owing to the microprudential measures which had been adopted in Finland.



3.3.4 Luxembourg

Summary

Cyclical position of the housing market: Firm/mature expansion	Policy appropriateness: Partially appropriate
Risk assessment: High risk	Policy sufficiency: Partially sufficient
Key vulnerabilities High house price growth, house price overvaluation, high housing lending growth, high indebtedness, signs of loosening of lending standards	

Description of vulnerabilities

House price growth has accelerated strongly in Luxembourg, and statistical and model-based estimates suggest that the RRE market is overvalued. The average real annual growth rate for house prices over the last three years has doubled since the third quarter of 2019, standing at 12.3% in the second quarter of 2021. In real terms, house prices grew by an average of almost 15% in 2020 year-on-year. Despite the impact of the pandemic, house prices have continued to rise at a fast pace. RRE prices grew by 17.2%, 16% and 9.7% in real terms in the fourth quarter of 2020, the first quarter of 2021 and the second quarter of 2021 respectively, recording some of the highest growth rates in the EEA. Even though the last quarter has been showing signs of a slight deceleration, house price growth has remained strong and has easily outpaced that of household incomes. The long period of substantial RRE price growth has led to a build-up of house price overvaluation. The average overvaluation in the fourth quarter of 2019 was estimated to be the highest in the EU at 41%⁵⁷. While the ECB's overvaluation estimates ensure cross-country consistency, they do not necessarily accommodate country-level specificities. Alternative and country-specific estimates by Banque centrale du Luxembourg suggest a lower overvaluation of 18.5% for the second quarter of 2021. Beyond the low level of interest rates, structural demand and supply factors such as high net migration, land availability constraints, regulated markets, and a limited number of construction permits combined with a cumbersome process for obtaining building permits have continued to put pressure on house prices⁵⁸. The overall number of dwellings per thousand inhabitants has decreased since 2010, as housing supply has not kept pace with the increasing level of net migration, which was the second highest in the EU in 2019. Regarding housing supply, the Luxembourg government has recently taken significant steps which are expected to have a dampening effect on price growth acceleration.

Mortgage lending has accelerated further, while lending standards have continued to show signs of deterioration. High house price growth has been fuelled partly by strong growth in mortgage lending. Indeed, there are no signs of a slowdown in lending for house purchases, which continued to grow strongly by 7-8% annually between 2019 and 2020. Robust lending growth over the last three years, as well as recent growth of 6.1% in August 2021 (over the previous 12

⁵⁷ The average overvaluation (the simple average of the price-to-income and econometric model overvaluation estimates) stood at 58% in the second quarter of 2020.

⁵⁸ These are structural factors which are not usually taken into account by overvaluation measures, but which may indeed lead to higher fundamental values for house prices.



months),⁵⁹ suggests that the housing cycle in Luxembourg is still in a firmly expansionary phase. Before the activation of LTV limits, an analysis carried out by Banque centrale du Luxembourg and the CSSF (Commission de Surveillance du Secteur Financier) showed a trend of a continuing loosening of mortgage credit standards. The latest data, however, show an improvement in LTV ratios following the introduction of LTV limits in January 2021, as the share of new loans with LTV ratios above 80% declined in the first half of 2021. By contrast, the share of new loans with a loan-service-to-income (LSTI) ratio above 40% has increased somewhat, while the other indicators of lending standards related to borrowers' income and indebtedness have stabilised. Nevertheless, more time is needed to see the full effect of the LTV limits imposed in January 2021. The fact that the margins charged by banks to households for house purchases are lower than the EU average is an additional point of concern.

Household indebtedness in Luxembourg is still one of the highest in the EU and has remained broadly at the level it reached in 2019. Household debt stood at 175.9%⁶⁰ and 68.6% in terms of income and GDP respectively in the second quarter of 2021. In 2020, the household debt stock increased robustly in line with pronounced growth in mortgage lending. Similarly, despite the pandemic, household incomes grew by 5% in nominal terms in 2020 and 8.1% in the first quarter of 2021, supported by higher net social transfers which have helped keep the debt-to-income ratio reasonably stable. Vulnerabilities may be further amplified by the fact that around 30% of housing loans are at a variable interest rate, although in the current low interest rate environment there are no signs of interest rates surging abruptly, which reduces the risk for variable interest rate loans in the short-term.

Policy mix

- LTV: legally binding LTV limits of 100% for first-time buyers, 90% for buyers other than first-time buyers acquiring a primary residence (lenders can go beyond this limit by up to 15% of their annual production, without exceeding an LTV limit of 100% per loan granted). For all other borrowers, including buy-to-let borrowers, the LTV cap is set at 80%. The measure was introduced with effect as of January 2021.
- Risk weights requirement: risk weight floors of 15% for exposures to Luxembourg residential real estate of IRB banks. Institutions using the IRB approach should ensure that their regulatory capital adequacy is subjected to a stress test. The stress test on the retail exposures secured by residential property requires an increase of a minimum of 50% of the probability of default and a loss-given-default of at least 20%.
- CCyB: the CCyB was increased to 0.5% in December 2019 with effect from January 2021. The CCyB rate has not been relaxed during the pandemic.

⁵⁹ Figure adjusted for sales and securitisation.

⁶⁰ The Banque centrale du Luxembourg estimates the household DTI ratio to be lower, standing at 174.4% in the second quarter of 2021. Official data from STATEC on disposable income is only available on an annual basis up to 2020, and quarterly values for 2021 are Banque centrale du Luxembourg projections.



Policy assessment

The current measures are deemed to be partially appropriate and partially sufficient. The positive CCyB rate helps to build resilience against the accumulated vulnerabilities, while the recently introduced LTV measure should cushion against vulnerabilities building up. While more time is needed to see the full effect of the LTV limits introduced in January 2021, given the high level of indebtedness of the household sector, coupled with very strong growth in house prices and mortgage credit, the national authorities should consider complementing the LTV measures by adding income-related measures to address the increasing vulnerabilities appropriately and sufficiently. Moreover, from a forward-looking perspective the authorities might consider it appropriate to increase the CCyB rate further or maybe complement it by adding the sectoral SyRB once the economic recovery is on solid ground and the ongoing review of the determination of risk weights has been finalised.

The government has taken several important steps to address some of the structural factors that have been driving the identified vulnerabilities. In particular, a law dating from December 2020 aims to address fiscal advantages and incentives enjoyed by real estate speculation by reducing the rate of accelerated amortisation applicable to buy-to-let housing for buildings acquired after 1 January 2021. In this respect, the government plans to introduce a draft law to reform property tax within the next year to further combat speculation in the real estate market. In March 2020, the government also created a special fund to support housing development and in 2021 the initial budget of this fund was increased further. In addition, as of January 2021, a new real estate tax for certain investment funds was introduced, the aim being to prevent abuses arising from the exploitation of the tax regime applicable to “Fonds d’investissement spécialisés” and other investment funds in the real estate sector in Luxembourg. With the aim of increasing the amount of land available for affordable housing in urban planning projects, the housing pact between the government and the “communes” is being reviewed. Finally, deadlines are being tightened for developers to start construction once they have secured a building site. These and, possibly, other additional measures aimed at addressing imbalances in the housing market and household incentives to accumulate debt should be welcomed.



3.3.5 The Netherlands

Summary

Cyclical position of the housing market: Firm/mature expansion	Policy appropriateness: Appropriate
Risk assessment: High risk	Policy sufficiency: Partially sufficient
Key vulnerabilities Signs of house price overvaluation, elevated house price growth, high household indebtedness, loose lending standards	

Description of vulnerabilities

House prices have increased strongly in the Netherlands over the last few years. House prices increased by an average of 4.5% in 2019, after which they picked up again to reach 6.4% in 2020 and 9.3% in the first quarter of 2021. The housing market is showing signs of overheating in the big cities. Overall, ECB estimates suggest that house prices became more overvalued in 2020. On the supply side, there has been a further increase in residential construction and investment, even though there is still a housing shortage in the big cities. At the same time, tax incentives have been gradually reduced.

Lending standards eased further in 2019 and 2020, although recently the share of riskier loans has decreased. The share of new loans with high LTV values remains large, even though recently the share of new loans with an LTV ratio of above 90% has been declining, according to the authorities. Still, more than half of first-time buyers are borrowing at LTV ratios of above 90%.⁶¹ The DSTI ratio increased further in 2019 and again in 2020. In 2020, the authorities observed a small increase in deferred payments of mortgages, while voluntary debt repayments decreased. Overall, there is no sign of more cautious loan-taking behaviour with regard to house purchases. Finally, IRB risk weights for mortgage loans have continued to decline, falling to 7.8% in the first quarter of 2021 from 10.7% in the first quarter of 2019. The postponed Article 458 measure stipulating a minimum risk weight floor for IRB banks' mortgage portfolios will therefore be activated with effect from 1 January 2022. As of March 2021, according to EBA data, 0.08% of total loans and 0.1% of households were still under moratoria. Also, according to the authorities, the interest fixation period has increased recently, and now exceeds ten years for 58% of new mortgages.

High household indebtedness continues to present pronounced risks for the Netherlands. However, debt indicators have declined slightly over the last few years. Moreover, the stock of loans for house purchases has remained flat recently. In March 2021, both the year-on-year and the three-year average lending growth rates decreased significantly, falling to -1.8% and -1.8%⁶² respectively. While the share of non-amortising loans decreased in the period between 2013 to 2018, its share in new mortgage production increased slightly in 2021 and the share is still significant in the stock of mortgages (standing at slightly above 40% in the second quarter of

⁶¹ See De Nederlandsche Bank (2021), *Financial Stability Report*, Autumn 2021.

⁶² Figures adjusted for sales and securitisation.



2021⁶³). Loan moratoria were offered by all credit providers as a response to the pandemic, with requests being considered on a loan-by-loan basis. As of September 2020, 1.3% of outstanding mortgage debt was subject to a moratorium.

Policy mix

- LTV: the LTV limit has been gradually reduced from 106% to 100% (the level reached in 2018).
- DSTI: DSTI limits (ranging from 10.5% to 35%) in a matrix of income and interest rate levels.
- Maturity limits: maturity limit of 30 years for tax deductibility of mortgage interest payments.
- Article 458: minimum risk weight floor for IRB banks' mortgage portfolios. Originally introduced with effect from January 2021 due to the pandemic, the measure has been postponed and will be activated as of January 2022⁶⁴.
- SyRB: 3% for three banks. The SyRB was partially released during the pandemic. The measures were motivated by the previously announced plan to revise the composition of the capital buffer requirements while keeping the overall level constant. This plan foresees the introduction of a CCyB of 2% once the economic recovery is complete⁶⁵.

Policy assessment

The current policy mix is assessed as being appropriate and partially sufficient. The LTV and DSTI limits, coupled with the maturity limit for tax deductibility, are an appropriate set of borrower-based measures for addressing flow vulnerabilities. Nevertheless, given that these vulnerabilities have continued to increase, according to De Nederlandsche Bank recommendations the LTV limit should be reduced significantly so that flow vulnerabilities can be sufficiently addressed. In addition, adjustments should be made to the methodology used to calculate the DSTI limit in order to address its procyclicality. The DSTI limit in the Netherlands is set for the purposes of consumer protection and the figure calculated using that methodology has been increasing, so the limit has been loosened. From a financial stability perspective, it is therefore assumed to be less effective in mitigating RRE vulnerabilities, which have been increasing. The Article 458 measure, which will be activated in January 2022 and which should raise IRB risks weights, is warranted and could help to build resilience to the accumulated risks related to household indebtedness and the overvaluation of house prices.

⁶³ De Nederlandsche Bank (2021), *Financial Stability Report*, Autumn 2021.

⁶⁴ De Nederlandsche Bank (2021), *Financial Stability Report*, Autumn 2021.

⁶⁵ See [press release announcement](#).



3.3.6 Sweden

Summary

Cyclical position of the housing market: Mature expansion	Policy appropriateness: Appropriate
Risk assessment: High risk	Policy sufficiency: Partially sufficient
Key vulnerabilities High and rising household indebtedness, house price overvaluation, high house price growth, high mortgage lending growth and high level of non-amortising mortgages in the stock of existing mortgages, interconnectedness with the Nordic banking system	

Description of vulnerabilities

Household indebtedness in Sweden has increased substantially since 2019 and remains at one of the highest levels in Europe, supported by strong growth in mortgage lending. The level of household indebtedness stood at 188% of disposable income in the first quarter of 2021, compared with 177% in the third quarter of 2019, although the DSTI ratio was unchanged in the fourth quarter of 2020 at 17.1%. The average LTV ratio for new mortgagors was 66.4% in 2020, which is 0.9 percentage points higher than in 2019. 11.3% of new borrowers with mortgages had a loan-to-income ratio higher than 4.5 of gross income in 2020, which is just over 2 percentage points higher than in 2019. Due to stricter amortisation requirements introduced by Finansinspektionen in 2018, even though these ratios are increasing they are still lower than they were in 2017. Nevertheless, there has been a gradual shift towards higher loan-to-income ratios over time. Moreover, the ratios increase significantly if loans obtained through housing cooperatives are taken into account. Moreover, the share of non-amortising loans still remains a source of vulnerability for a significant part of households (it accounted for 28% of outstanding loans in the third quarter of 2020 compared with almost 30% in 2017). In addition to their bank loans, many households also have indirect debt in the form of loans taken out by their housing cooperatives, whose interest expenses and amortisations are partly reflected in the cooperatives' monthly fees. Household vulnerability is further amplified by the large shares of loans with variable interest rates. Loans which have a variable interest rate normally have a very short fixation period of three months, which poses a high risk of loans being renegotiated. Furthermore, the lag for the yearly survey on lending standards is deemed too long to sufficiently monitor risks related to lending standards. Sveriges Riksbank and Finansinspektionen are hoping to be able to monitor risks related to lending standards more frequently than once a year. In January 2021, the Swedish government decided to carry out a study on how individual-based statistics on household assets and liabilities could be produced and used to obtain an adequate picture of households' financial positions, thereby making it easier to assess households' resilience to shocks.

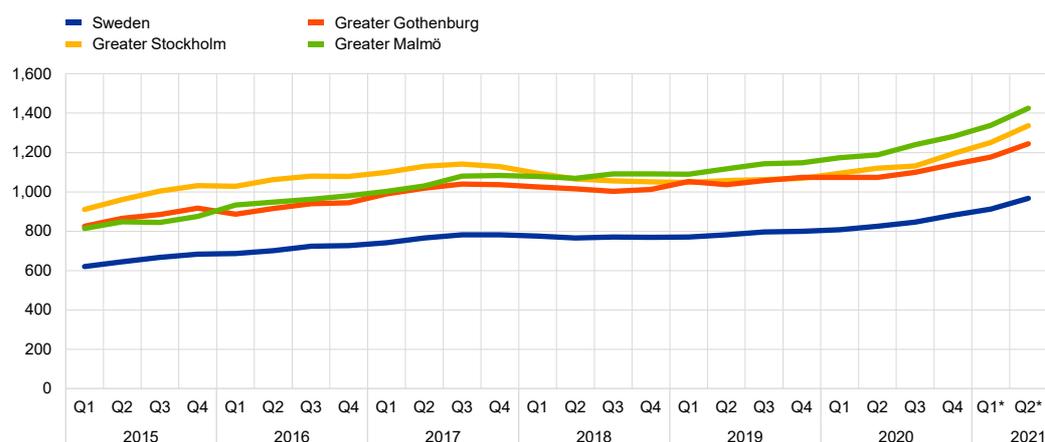
House price growth has been picking up recently and residential property is still significantly overvalued based on some estimates, eroding the affordability of housing for households. Excessive demand pressures weakened slightly and house prices stabilised at the beginning of 2018, although they started to rise again around a year later. Annual house price growth was 10.9% in real terms in the first quarter of 2021 and, overall, house prices grew by



12.1% between the third quarter of 2019 and March 2021. Real estate prices in Stockholm dipped after the third quarter of 2017 although they are now rising again and at an even faster pace than before the dip. Prices in Malmö and Gothenburg, two other major cities, have also increased steadily (Figure 32). Rising RRE prices stemming from population and economic growth, supply shortages, tax incentives for home ownership, and a low interest rate environment over an extended period have led to overvalued house prices. This could make owners and lenders more sensitive to adverse developments in the RRE market. At the same time, such adverse developments could have an effect on consumption in Sweden given the link between housing wealth and consumption. The house price-to-income-ratio was 56% above its average in 2020, and model-based evidence suggests that house prices were overvalued by 43% in 2020, although these estimates are surrounded by uncertainty and will alter in accordance with the underlying assumptions made, the model chosen and the time period, or if the low interest rate environment is taken into account.

Figure 32
Real estate price index for one and two-dwelling buildings for permanent living by region and quarter

(index: 1981=100)



Source: Statistics Sweden.

Residential construction picked up to around 50,000 apartments in 2019 and 2020, which is a high number from a historical perspective, although it is still below the estimated need of 59,000 housing units. Moreover, regulatory constraints, which affect the supply of rental housing, and tax incentives for home ownership still impact the Swedish housing market significantly and push people into home ownership instead of renting. Efforts have also been made to reform the present fairly strict rental regulations. A recently suggested reform targeting newly built rental apartments was, however, suspended for political reasons. In the current system, landlords may only charge a “reasonable rent”. The reasoning behind the current system is that it is fairer and keeps housing affordable, but caps on rents have also meant that fewer new rental properties get built. Combined with a rising population, especially in Sweden’s larger cities, this has led to a major housing shortage. On the other hand, if rent controls were ever to be abolished, owning an



apartment might become even more desirable than it currently is. That would have an effect on RRE market prices and demand.

Policy mix

- LTV: LTV for new loans should not be more than 85%.
- Amortisation requirement: new borrowers with mortgages in excess of 4.5 times their gross income must amortise at least 1% of the debt in addition to the existing amortisation requirement. New borrowers with mortgages with LTVs of between 50% and 70% must amortise at least 1% while those with mortgages with LTVs of above 70% must amortise at least 2%. In April 2020, Finansinspektionen granted temporary exemptions to banks until 31 August 2021. The exemption covered amortisation payments: mortgages issued during the exemption period amortise according to the requirements in place from September 2021.
- Article 458: risk weight floor of 25% on housing loans applicable to credit institutions that have adopted the IRB approach. The measure was extended for an additional year from 31 December 2020.
- CCyB: confirmed at 2.5% in January 2020. During the pandemic, the CCyB was fully released (to 0%) in March 2020. In September 2021 the rate was increased to 1% (as of September 2022).
- SyRB: a rate of 3% applicable to three institutions.

Policy assessment

The current policy measures are assessed as being appropriate and partially sufficient. The Article 458 measure is assessed as appropriate for addressing the vulnerabilities related to the overvaluation of house prices, the stock of loans and household indebtedness. Moreover, Finansinspektionen announced its intention to extend the current IRB risk weights of 25% for another two years from 31 December 2021 and started rebuilding the CCyB (the rate increased to 1% in September 2021). The CCyB is expected to reach a positive neutral rate of 2% in 2022.

These measures are complemented through the addition of a number of borrower-based measures which are considered to be appropriate for addressing the further build-up of vulnerabilities. In order to address flow vulnerabilities sufficiently the Swedish authorities should consider complementing these measures through the addition of policy measures that would limit borrowing by overindebted households and, therefore, their sensitivity to interest rates, while striking the balance between mitigating the risks and aiming to avoid procyclical effects on the overall performance of the real economy and the financial system. Such measures could include a direct DTI limit, which would also take into account the amount of credit taken on by housing cooperatives. The collection of data on lending standards for new mortgage loans should also be improved, so that up-to-date information is regularly available. Last but not least, there is also a need to continue to consider further policy actions aimed at addressing the underlying factors which have contributed to generate these vulnerabilities. In particular, housing and taxation policy



measures should be implemented that could address the underlying structural imbalances in the housing market as well as household incentives to accumulate debt.

3.3.7 Czech Republic

Summary

Cyclical position of the housing market: Firm/mature expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities House price overvaluation, high and accelerating house price growth, high mortgage credit growth, loosening of lending standards	

Description of vulnerabilities

Since September 2019, the overvaluation of apartment prices has increased further, reaching between 18% and 25% at the end of 2020, according to Česká národní banka (CNB) estimates. Since the third quarter of 2019, real house prices have continued to grow, rising 6.7% on average year-on-year, and exceeding growth in household incomes. Recently, growth accelerated to 9.7% and 11.4% in the first and second quarters of 2021 respectively. In a regional comparison, house prices have been rising quicker outside Prague, reflecting previous house price appreciation in the capital and, therefore, more limited space for further growth. Overall, the demand for housing has been sustained by – among other factors – the stability of employment and household incomes despite the pandemic, a reduction in monetary policy rates at the beginning of the pandemic, negative real mortgage interest rates and, possibly, the abolition of the property transfer tax in the first half of 2020. The CNB also points out that subdued construction activity, which followed the onset of the pandemic, is a factor which may contribute to the structural mismatch between supply of and demand for housing in Czech Republic, and may lead to further house price appreciation.

From 1 April 2020, the CNB relaxed or removed individual borrower-based measures, which was followed by an increase in the provision of credit with risky loan characteristics. In anticipation of the negative economic impact of the pandemic, the CNB decided to abandon the DTI limit and to loosen the LTV and DSTI limits from the beginning of April 2020. Removal of the DSTI limit followed in July 2020. These actions were in line with the forward guidance which had been provided by the CNB in the past, which stated that the borrower-based measures would be relaxed once an economic downturn occurred. The most recent data on lending standards for new mortgages cover the second half of 2020 and the first two months of 2021. These data show that credit providers did not change their lending policies on LTV after the limit had been eased. Nevertheless, the share of new mortgages with a DTI of above 9 (income in net terms) grew from 4% in March 2020 to 17% in December the same year. Similarly, the share of new mortgages with a DSTI of above 45% (again income in net terms) grew from 5% to 21% over the same period.



These dynamics warrant monitoring, especially because employment and household income may deteriorate as a consequence of the pandemic.

Despite the pandemic, growth in housing loans remained robust in 2020. Along with the easing of lending standards, growth in housing credit accelerated to about 7% in real terms between June and August 2021. Nevertheless, the indebtedness of households in terms of disposable income increased slightly compared with the year before, standing at just below 60% in the first quarter of 2021. In terms of GDP, indebtedness increased by 3 percentage points to slightly above 34% for the same period, owing to the previous decline in economic activity. The IRB risk weights for RRE exposures, which had been on a slightly decreasing path, remained broadly stable in 2020 and at the beginning of 2021.

So far, according to the stress test conducted by the central bank the banking sector is showing solid resilience with regard to withstanding severe economic stress. The share of NPLs of household loans has remained broadly unchanged, both because of fiscal measures to sustain household income and statutory loan moratoria, which were in place from May to October 2020. The share of housing loans which were subject to moratoria was stable, amounting to about 11% of the total stock of such loans. A special survey conducted by the CNB revealed that of the loans subject to moratoria, 7% of housing loans and 15% of consumer credit were expected to become underperforming, according to credit providers.

Policy mix

- LTV limit: during the pandemic, in April 2020, the limit was relaxed to 90%, with an exemption of 5% from the previous level of 80% (15% of exemption). In November 2021, it was decided to tighten the limit to 80% (90% for borrowers younger than 36) as of 1 April 2022.
- DSTI: during the pandemic, in April 2020, the limit was lowered to 50%, with an exemption of 5% from the previous level of 45%. The limit was abolished in July 2020. In November 2021, it was decided to reintroduce the DSTI limit at 45% (50% for borrowers younger than 36) as of 1 April 2022.
- DTI: during the pandemic, in April 2020, the limit of 9 with an exemption of 5% was abolished. In November 2021, it was decided to reintroduce the DTI limit at 8.5 (9.5 for borrowers younger than 36) as of 1 April 2022.
- LTV, DTI and DSTI limits have been introduced in a legally binding form in 2021 instead of the previous recommendations. A 5% exemption to the measures applies.
- Amortisation requirement: providers should not grant retail loans secured by residential property with a non-standard repayment schedule.
- Maturity limit: 30 years for residential loans.
- Stress test: assessment of clients' ability to service loans under adverse conditions (sizeable fall in income, rising lending rates, changes in conditions for clients who apply for retail loans secured by residential property).



- CCyB: during the pandemic, in March 2020, the rate was lowered from 2% to 1%, and then again in June 2020 to 0.5%. The limit was then increased three times – in April, August and November 2021 – to 2% as of 1 January 2023, i.e. fully rebuilt.
- SyRB: 1-3%, institution-specific until 30 September 2021, now replaced by institution-specific O-SII buffer of 0.5-2.5 %.

Policy assessment

The current policy measures are assessed as being appropriate and sufficient. Given the high and increasing overvaluation of house prices, as well as the continued growth in housing loans, credit standards for new mortgage loans need to be carefully monitored. Given the tightening of LTV limits and the reintroduction of DTI and DSTI limits, the policy mix is considered to address the flow vulnerabilities. The recent establishment of the legal framework for borrower-based measures is an important step and the ESRB welcomes the use of these powers. The CCyB, which has been fully rebuilt from its partial release at the beginning of the pandemic, is considered to address the stock vulnerabilities. Several monetary policy rate hikes in 2021 and a tightening bias may also have countercyclical effects against growth in household indebtedness and house price overvaluation via an increase in mortgage loan interest rates. Depending on the development of vulnerabilities in the medium term, the implementation of a sectoral SyRB could be considered. Apart from that, the CNB should keep monitoring IRB risk weights for signs of any further decreases.

3.3.8 France

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities Elevated household indebtedness, elevated housing lending growth, loose lending standards (improved since 2019), signs of house price overvaluation in some large cities	

Description of vulnerabilities

National house prices in France have been growing steadily since 2015. Growth was 2% in 2019 and accelerated to 5% in 2020. Three-year real annualised growth stood at 3.4% in the fourth quarter of 2020. While in the past house prices rose significantly faster in urban areas such as Lyon



and Paris than in non-urban regions, this relationship seems to have reversed recently.⁶⁶ Evidence from indicators of house price overvaluation provide mixed signals. The deviation of price-to-income from its long-term trend points to an estimated overvaluation of approximately 14% for the French housing market in 2020. However, the ECB econometric model points to an undervaluation of around 7% in 2019 and some upward movement to an undervaluation of 1% in 2020.⁶⁷ Meanwhile, the European Commission's overvaluation model points to an overvaluation of around 10% in 2020⁶⁸. The national authorities report that estimates based on several models do not indicate an overvaluation of RRE prices at the national level, with estimates varying between a small undervaluation and an overvaluation of up to 5% in the third quarter of 2020.

Regarding the funding stretch, growth in real housing loans continued to increase, reaching a strong 6.4% annual growth rate for loans in the fourth quarter of 2020, before slowing to around 3.4% in the first half of 2021. New housing loans (excluding renegotiations) were elevated and stood above €20 billion in June 2021.⁶⁹ In March 2021, 0.3% of total loans and 0.2% of households were still under moratoria.

Lending standards for loans to households for house purchases tightened in France in 2020, according to the ECB bank lending survey, with banks referring to the recommendations made by the HCFS (Haut Conseil de Stabilité Financière) and adopted in December 2019 as the main factor contributing to the tightening.⁷⁰ The terms and conditions for loans to households for house purchases also tightened, mainly on account of margins on riskier loans and collateral requirements, according to the bank lending survey. The median LTV ratio for new loans stood at 88.4% in September 2020, somewhat lower than its peak in December 2019. The LTV ratio stood at 90% for first-time buyers for own use and 85% for other buyers for own use. The share of loans with LTV values of over 95% was 23%. The median maturity of housing loans for reporting French banks stood at 20.5 years in September 2020, back to the peak observed in mid-2019. The HCSF advised banks to limit loan duration to a maximum of 25 years to avoid circumventing the DSTI measure. The debt service ratio has increased continuously over the last few years, rising from 10% in the fourth quarter of 2017 to 11.3% in the fourth quarter of 2020.⁷¹ At the same time, absolute DSTI average values appear prudent by international comparison. The average DSTI ratio decreased by 0.6 percentage points from January 2020, reaching 29.5% in December. These developments are mainly the result of the above-mentioned recommendation to banks regarding new housing loans to households, although part of the effect could also be due to the pandemic. Housing loans are typically collateralised by a guarantee issued

⁶⁶ For example, annualised prices of apartments in Paris had increased by 1.7% year-on-year in Paris in March 2021, compared with 7.9% one year earlier, while house prices in the rest of the country had increased by 6.5% in March 2021, compared with 4.2% one year earlier. See Banque de France (2021), *Evaluation des risques du système financier français*, June.

⁶⁷ Note that the underlying econometric model has been revised since the last assessment in 2019 on account of revisions to the real housing capital stock data. As a result, valuation estimates for France have been revised substantially downwards.

⁶⁸ See European Commission (2021), *Alert Mechanism Report 2022 – Report from the Commission to the European Parliament, the Council and the European Economic and Social Committee*, Brussels.

⁶⁹ See Haut Conseil de Stabilité Financière (2021), *Bilan de la recommandation n°R-HCSF-2021-1 du 27 janvier 2021 relative à l'octroi de crédits immobiliers résidentiels en France*, *Communiqué de presse – annex*, 14 September.

⁷⁰ See European Central Bank (2020), *The euro area bank lending survey*, fourth quarter.

⁷¹ Note that we use here the debt service ratio; when Autorité de contrôle prudentiel et de résolution (APCR) data were used the median DSTI declined in 2020. This is related to a difference in methodology, as the BSI methodology used in this note for comparability across countries uses aggregate figures for debt service and income, while the APCR methodology uses the borrower-based definition, taking into account the debt and income of individual borrowers.



by specialised funds, rather than by property value. This practice, combined with the full-recourse framework, might protect banks from household defaults.⁷² However, should systemic risk materialise the guarantee scheme may only partially insulate the financial system against negative consequences, given the tight links between guarantors and banks. Still, the ACPR (Autorité de contrôle prudentiel et de résolution) stress-test results provide reinsuring signals in this respect for the main three guarantors of the system, which cover 86% of the guaranteed loan market. Meanwhile, the quarterly flow of new NPLs for housing credits declined further, reaching 0.10% in December 2020.

Regarding the household stretch, household debt in France is elevated and stood at 100.5% as a share of disposable income in 2020 bringing it 4 percentage points above the level observed in 2019. The ratio has continued its steady increase observed over the past few years. In France, more than 60% of households are homeowners, with more than a third having a housing loan, according to the OECD. Housing loans represent about 80% of total household debt, according to the HCSF. Despite the introduction by the HCSF of a recommendation to banks regarding lending standards, lending to households has remained dynamic. Still, the recommendation has led to a lower share of loans with higher DSTI and with long maturities. Housing credit has been stimulated by interest rates that remain at their historical lows. Nevertheless, a large share of borrowers is not exposed to interest rate shocks due to the very large share of fixed rate loans (98.5% in 2019).⁷³

Policy mix

- DSTI: limit of 35% since January 2021 (legally binding from 1 January 2022).⁷⁴
- Maturity limit: 25 years for residential mortgage loans since January 2021 (legally binding from 1 January 2022).
- CCyB: during pandemic, in March 2020, the rate was lowered from 0.5% to 0%.

Policy assessment

The current policy mix is considered to be appropriate and sufficient. The borrower-based measures are assessed as being appropriate and sufficient to address risk related to mortgage lending growth, loose lending standards and rising house prices. The introduction of DSTI and maturity limits in January 2021 led to a significant decrease in the share of new mortgages with risky characteristics. On 14 September 2021 the HCSF converted the recommendation into a legally binding measure. For upcoming quarters, the authorities should continue to closely monitor housing market developments – particularly household indebtedness – and lending practices, as well as the impact of the DSTI measure as this needs more time to fully deploy its effect on lending

⁷² The debtor does not choose the type of collateral to pledge: debtors with good credit profiles are selected to be issued a guarantee. The selected debtors pay an initial fee for the guarantee. In the event of default, the bank receives the guarantee from the fund and the fund should work out the recovery of the loan. In theory, if no amicable solution can be found with the debtor, the guarantor can register a mortgage by court order and the property may be sold to repay the loan.

⁷³ See Banque de France (2020), *Analyses et synthèse : Le financement de l'habitat en 2019*, ACPR, No 114.

⁷⁴ See Haut Conseil de Stabilité Financière (2021), *Communiqué de presse Paris*, 14 September.



practices. Once the economic recovery is on solid ground it will be necessary to rebuild capital buffers. Given that the IRB risk weights for mortgage exposures are among the lowest for EEA countries, increasing these risk weights should be considered the associated vulnerabilities increase further, along with rebuilding the CCyB or replacing it with a sectoral SyRB. This would provide resilience against the potential materialisation of housing market risks (also) stemming from elevated household indebtedness.

3.3.9 Germany

Summary

Cyclical position of the housing market: Firm/mature expansion	Policy appropriateness: Partially appropriate
Risk assessment: Medium risk	Policy sufficiency: Partially sufficient
Key vulnerabilities House price overvaluation, high house price growth, signs of loosening of lending standards, significant data gaps	

Description of vulnerabilities

Following a period of gradual growth, real house price growth has increased even further, rising from 5.3% in the first quarter of 2020 to 8.1% in the first quarter of 2021 and largely outpacing growth in household income. In addition, the house price dynamic has become more broad-based across urban and rural areas. House price increases in large cities and urban areas reflect a shortage of supply relative to demand, and the German federal government has introduced a number of measures aimed at alleviating such shortages.

Estimates for 2020 point to an overvaluation of house prices in Germany as a whole by between 15% and 17%, according to the ECB inverted demand model and the price-to-income ratio respectively. For the first quarter of 2021, the estimates increased further to between 19% and 23%. According to the German authorities, overvaluation remained high in urban areas but also accelerated outside urban areas, bringing the latter closer to the former (overall house price overvaluation was between 10% and 30% in 2020, according to Deutsche Bundesbank estimations⁷⁵). According to the German authorities, over the past few years price growth outside urban areas has been as strong as it has been in urban areas. The potential underlying regional shift in housing demand should reduce price pressures in urban areas and, therefore, reduce the overall risk by more than the amount suggested by aggregate price figures. At the same time, this dynamic may be associated with rising overvaluation in the rest of the country, while so far overvaluation has been concentrated mainly in big cities.

Despite a recent pick-up in new lending, annual growth in housing credit has been moderate over the past three years, reaching 4.3% in real terms in the first quarter of 2021, after adjusting for sales and securitisation. This indicator has increased since 2019 and is now

⁷⁵ See Deutsche Bundesbank (2021) *Financial Stability Report*, November.



slightly above the EU average. While lending margins on loans to households for house purchases have generally trended downwards since 2019, they went up in 2020 compared with their levels at the end of 2019 (although they are below all other countries which received warnings except for France). However, structural characteristics in Germany justify lower lending margins: for example, mortgage lending values are used instead of substantially higher and more volatile market values, amortisation rates are high and only a very small share of lending is at variable interest rates. While lower lending margins could still point to some vulnerabilities in Germany, they could also indicate that loans have a lower risk content. Credit conditions for house purchases tightened over the course of 2020, according to the ECB bank lending survey, although they have not tightened further in 2021. The tightening in 2020 was mainly due to a change in risk perception in response to the pandemic. Terms and conditions on loans to households for house purchases also tightened, mainly due to increases in margins loans, according to the bank lending survey. The tightening also concerned lending standards as expressed by LTV ratios. In March 2021, 0.09% of total loans and 0.1% of loans to households were still under moratoria and there has not been any notable increase in defaults, NPLs or any other loan quality metrics for loans to households.

Non-representative information provided by a loan brokerage platform indicates that the share of loan applications with high LTV ratios increased further in 2020 and has remained stable in 2021. This information is, however, based on loan applications instead of loan transactions. Any comprehensive analysis would currently be hindered by the lack of detailed data on LTVs as well as data on other credit ratios for newly provided loans. A new dataset on the trend for lending standards for new mortgage loans in Germany has recently become available to the Deutsche Bundesbank, based on loan transactions from another loan brokerage platform. However, as of 2021 it only covers a part of the German market. This dataset shows that the average LTV as well as the share of high LTV ratios increased slightly between 2015 and 2019. After the onset of COVID-19 the average LTV and the share of high LTV ratios fell once again. This development is in line with evidence from the bank lending survey. We welcome the fact that action has been taken to collect data from 2023, pursuant to Section 6 of the German Financial Stability Act.⁷⁶

Policy mix

- Legal framework for borrower-based instruments: in 2017, this gave BaFin – after taking into account the recommendations made by the Financial Stability Committee – the possibility of activating legally binding limits to LTV ratios and amortisation requirements associated with new mortgage loans. The activation of macroprudential measures is conditional on the monitoring of vulnerabilities and the identification of systemic risks related to the RRE sector.
- CCyB: during the pandemic, in March 2020, the CCyB rate was lowered to 0% from 0.25% (the previous level introduced in June 2019).
- Legislation has been put into place to allow for a first regular data collection on real estate lending conditions, which is expected to start in 2023. The Deutsche Bundesbank has already

⁷⁶ The **final version of the administrative act** was published on 29 September 2021.



made use of this legal basis and is expected to receive data from the end of the first quarter of 2023, pursuant to the General Administrative Act which was passed in September 2021.

Policy assessment

The current policy mix is considered to be partially appropriate and partially sufficient.

Currently, there are no macroprudential measures in place in Germany that would address the vulnerabilities related to house price overvaluation, elevated mortgage credit growth and potentially loose lending standards, which are currently argued to be related to the still elevated uncertainty caused by the pandemic. It is to be welcomed that legal frameworks for borrower-based measures (including LTV limits and amortisation requirements) and for the collection of data on lending standards have been established and that other data from a brokerage platform are being looked into, even though the latter only cover a part of the market. Based on further developments in lending standards, it is necessary to renew the discussion regarding the introduction of LTV limits, including the option of legally non-binding activation. In parallel, the legal framework for borrower-based measures should be complemented by adding income-based instruments, as was recommended by the German Financial Stability Committee in 2015. While the introduction of such instruments into the legal framework may take some time, the authorities should consider activating borrower-based measures through legally non-binding measures in the meantime, to ensure sound lending practices. This can be done, for instance, through formal communication highlighting the current risk situation and the need for lenders to prudently set income-related parameters in loan contracts. In addition, reintroducing the CCyB or replacing it with the sectoral SyRB could be viewed as increasing the resilience of the banking sector against risks which might have accumulated in the absence of borrower-based measures over the last few years.

3.3.10 Iceland

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities High household indebtedness, elevated house price growth, signs of house price overvaluation, some concerns about lending standards, persistent housing credit growth	

Description of the vulnerabilities

Mortgage lending is still the driver of developments in household indebtedness. In the second quarter of 2021, real household debt grew by an average rate of 7.4%⁷⁷ year-on-year,

⁷⁷ Using country-specific CPI as the deflator, year-on-year growth of real household debt was 3.5% on average in the first three quarters of 2020.



compared with an average of 5.8% and 5.2% in 2020 and 2019 respectively. This dynamic has continued to be driven by mortgage lending, while growth of other loans to households remained limited in 2020. Given the economic uncertainty related to the pandemic, mortgage lending was supported by declining interest rates on loans, which followed several cuts in monetary policy rates in 2020, and sustained household incomes, which grew more rapidly despite increasing unemployment. As a result, the household DTI ratio increased by more than 4 percentage points within a year to 139% in the first quarter of 2021. From a medium-term perspective, the sustainability of income growth must be carefully assessed in the light of the uncertainty related to the timing of the economic recovery. This is especially true since a part of the wage growth is the result of past labour union agreements and may not fully reflect the most recent economic conditions. The household debt to GDP ratio increased to 86.9% in the first quarter of 2021 (up from 76.5% in the first quarter of 2019), also reflecting the COVID-19-related drop in economic activity.

The share of new mortgage loans with high values of DTI and other credit indicators has decreased. The share of new mortgages with a DTI ratio of above 4 (income in net terms) was 26% in July 2020, compared with 33% in January 2020. The share of new mortgage loans with a DTI ratio of above 6 declined further to 5% over the same period. Similar improvements over the first half of 2020 have also been seen in relation to other credit ratios and the LTV ratio in particular. Specifically, the share of new mortgages with LTV ratios over 70% declined to almost half, from 52% in January to 27% in July. While these were considerable improvements, a good part of these changes can probably be explained by older loans being refinanced (with sounder credit ratios, as some of the loans have already been repaid). Recently, there have been signs that average LTV values have been increasing again according to the central bank, while the DSTI values have remained broadly unchanged. Nevertheless, the share of new loans with LTV values higher than 85% was contained at 4.5% between January and August 2021, while the share of new loans with DSTI values of above 30% was 14% in the same period. With regard to the stock of existing mortgages, the share of loans with LTV ratios over 70% was roughly 10%.

The share of CPI-indexed loans in new production has continued to decline, although this has been offset by an increasing share of loans with variable interest rates. The share of new household loans, the annuity of which is regularly augmented depending on the rate of inflation, continues to decrease. Owing to these dynamics, the share of CPI-indexed loans in the stock of existing household debt decreased from 69% at the beginning of the pandemic to 50% in the second quarter of 2021. On the one hand, this is a favourable development as the CPI-indexation may lead to lower amortisation of the loans in times of higher inflation. On the other hand, CPI-indexed loans have been replaced, to a large extent, by loans with variable interest rates. At the same time, while variable rate loans are associated with lower risks for credit providers, they increase vulnerability of households against potential increases in interest rates. In August 2020, the share of variable rate loans was 76% of new housing loans, compared with 65% in September 2019. In 2020, however, this ratio came down significantly, reaching 32% at end-2020, probably as a consequence of the monetary policy rate hikes made by the Central Bank of Iceland. About 20% of the stock of existing mortgage loans are both CPI-indexed and variable rates, although the share of these loans with joint risky characteristics has been declining. Against this background, the results of the household stress test conducted by the Central Bank of Iceland show that the share of borrowers with high DSTI ratios would be limited should interest rates double from their current



levels (the share of borrowers with a DSTI of over 40% is projected to be 7% under such a scenario). The resilience of borrowers taking out variable rate loans should continue to be monitored.

The share of mortgages provided by non-bank credit providers declined, because of both new loan production and renegotiations.

Decreasing interest rates on housing loans are considered to be one of the main reasons for the sustained demand for mortgage credit. Nevertheless, the evidence shows that banks lowered interest rates more significantly than pension funds, which provided 36% of new mortgages in 2019. As a result, banks were able to offer new or refinance existing loans at rates that were comparable with those of the pension funds (in the past pension funds provided more favourable rates, although these were limited to the funds' clients). These developments led to a decreasing share of non-bank providers in the production of new mortgages, which was 12% at the end of 2020, also as a result of existing mortgages being refinanced by banks. At the same time, banks' lending margins remained broadly unchanged between 2019 and 2020 and are relatively high by cross-country comparison (2.3% in August 2021).

Despite economic uncertainty, activity in the housing market has increased significantly.

In the second quarter of 2020, i.e. during the first part of the pandemic, housing turnover dropped by 37% compared with the same period one year earlier. Nevertheless, it recovered over the summer when the figures surpassed the numbers from the previous year by 57%. There was increased demand from those looking to purchase property, despite the fact that rentals were not keeping pace with prices and were even decreasing in some parts of the country, reflecting the excess of supply due to the drop in tourism and short-term rentals. After peaking in March 2021, more recently housing turnover has declined to some extent. In the first and second quarters of 2021, however, real house prices accelerated by 7.2% and 12.0%⁷⁸ respectively year-on-year, compared with 2.1% and 3.4% respectively one year earlier. While such growth has surpassed growth in incomes, its sustainability must be reconsidered in the light of the uncertainty related to the timing of the economic recovery and the recovery of the tourist industry, which would revitalise the rental market. In 2020, the effect of demand pressures on house prices might be counteracted by a record number of newly constructed flats in the capital and its surroundings. Nevertheless, the number of flats under construction or started has decreased recently. The outlook for the supply of property and house price pressures may depend on the future path of interest rates on new mortgage loans as well as on factors like the extent of the recovery in tourist inflows.

The stress test conducted by the central bank shows the solid resilience of the banking sector with regard to withstanding severe economic stress.

The stress scenario from September 2021 assumed that unemployment would peak at 8.7% in 2021. Under these circumstances, the banking sector may be assumed to be sufficiently resilient. While household default rates were up slightly in mid-2020 (from 2.1% in July 2019 to 2.7% in July 2020), mostly concentrated in consumer credit, they have declined again recently. Also, the volume of loans under moratoria has been fairly limited, peaking at 9% in May 2020 and declining to 4% in September 2020, mainly due to the fiscal measures adopted in relation to the pandemic (the measures were discontinued at the end of 2020). Nevertheless, if the vulnerabilities related to the housing market continue to increase as they did in 2020, this will pose an additional risk of adverse

⁷⁸ Using country-specific CPI as the deflator, the year-on-year growth of real house prices was 4% in 4Q 2020.



developments and a more protracted downturn in the future. In February 2021, the unemployment rate reached 11.4% but then declined to 5.5% in August 2021. This suggests that if residential real estate risks start to materialise, the impact might be somewhat worse than projected in the stress scenario.

Policy mix

- LTV: in July 2021, the limit was tightened from 85% to 80% for non-first-time buyers. The limit for first-time buyers is still 90%.
- DSTI: the limit of 35% (40% for first-time buyers) was newly introduced in September 2021.
- CCyB: during the pandemic, in March 2020, the CCyB rate was fully released from 2% to 0%. In September 2021, it was increased again to 2% (as of September 2022).
- SyRB: 3% on domestic exposure.

Policy assessment

With regard to medium-term risks, policy is assessed as being appropriate and sufficient.

Increasing house prices and household indebtedness in Iceland warrant careful monitoring, especially in the current situation with interest rates at historically low levels and given uncertainty over the eventual impact of the COVID-19 crisis on the economy. For households, variable rate loans represent a risk once monetary policy in Iceland normalises and interest rates increase. This may be further aggravated if macroeconomic risks materialise in Iceland, potentially as a consequence of the COVID-19 shock and the strong reliance of Iceland on tourism. Moreover, a significant share of loans are still variable rate, which may increase the debt-servicing burden of borrowers carrying these loans once interest rates go up. Recently, the Financial Stability Committee responded to existing as well as potentially emerging vulnerabilities by adopting several macroprudential measures. In July 2021, the Financial Stability Committee tightened the LTV limit from 85% to 80% for non-first-time buyers. In September 2021, the Committee introduced a DSTI limit of 35% (40% for first-time buyers) and increased CCyB to its pre-pandemic level (2%). Since May 2021, the Central Bank of Iceland has increased monetary policy rates three times, which could have countercyclical effects on house prices and households' intake of new debt. After the last hike in September 2021, the key monetary policy rate stood at 1.5% compared with 0.75% after the pandemic-related relaxation. In view of these changes, the policy is assessed as being appropriate and sufficient.



3.3.11 Norway

Summary

Cyclical position of the housing market: Mature expansion	Policy appropriateness: Appropriate
Risk assessment: High risk	Policy sufficiency: Sufficient
Key vulnerabilities: House price overvaluation, elevated house price growth, high mortgage lending growth	

Since September 2019, household indebtedness has remained high and has increased still further. Household DTI stood at 234% in the fourth quarter of 2020 (an increase of 3.1 percentage points from the third quarter of 2019) and is projected to rise over the next few years. From 2017, household credit growth slowed for a while, reflecting the rise in interest rates between 2018 and 2019 and the introduction of a number of borrower-based measures by the authorities in recent years to restrain borrowing. Loans with DTI ratios over 5 have only rarely been granted since the restricting regulation was introduced in 2017⁷⁹. However, there is a large and increasing number of loans with a DTI ratio close to 5, which could be perceived as a sign of high risk. In line with the pressures on the housing market, credit growth has remained relatively robust, standing at 4.2% year-on-year (real terms) in January 2021. Since the onset of the pandemic, residential mortgage rates have fallen markedly so interest burdens have diminished and the use of interest-only periods increased sharply in the spring, alleviating the situation in particular for households that had experienced income loss. Still, the people most affected by the pandemic tend not to be homeowners. The share of variable interest loans is large (92% in January 2021) and has been increasing slightly, although stress tests have shown that this does not pose a risk of major defaults.

Mortgage lending continues to grow, remaining the major driver of household indebtedness. Medium-term growth in mortgage lending was identified as one of the main risks for households and the banking sector in the 2019 ESRB Warning. Mortgage loans to households have remained on a steady growth path even since the warning was issued, increasing by 6.7% between June 2019 and January 2021. Overall, growth in mortgage credit has gone hand-in-hand with growth in house prices and a decreasing path of mortgage interest rates. Furthermore, Nordic banks continue to finance housing markets cross-border, thereby representing another source of vulnerability to downturns in regional housing markets.

There have been increasing concerns related to house price overvaluation. Since 2017, the rise in prices had been moderate and lower than income growth, but this trend has reversed once again, and house prices increased markedly during the pandemic, from May 2020 to March 2021. During the pandemic, house price inflation has risen markedly since the initial negative shock in the first quarter of 2020 and, at the same time, household credit growth has edged up. In the first quarter of 2021 the price index for dwellings was up by 7.7% compared with the third quarter of

⁷⁹ Finansinstitilsynet issued and tightened several borrower-based measures in 2010, 2011 and 2015. In 2017 these measures were also complemented by adding a DTI limit of 5. Following the latter amendments, certain shares of new mortgage loans could be provided irrespective of the requirements. These “speed limits” were different for Oslo (8%) and the rest of the country (10%).



2019. Moreover, the 12-month rise in house prices was 8.5% in July 2021. Nevertheless, the Norwegian authorities see high house price inflation as temporary. Very low residential mortgage rates and a temporary relaxation of the residential mortgage regulation, which was one of the measures implemented to facilitate the provision of credit during the pandemic, may have been driving the rapid rise in house prices. House price inflation has risen in all parts of Norway, but most strongly in Oslo. Sales of existing homes have been high compared with previous years, while the stock of existing homes for sale has not increased to the same extent. The stock of new housing construction projects is expected to rise again due to high house prices and strong new home sales, according to Norges Bank. Interest rates are also expected to rise to some extent, and house price inflation is projected to stabilise at around 2% in the near future. Given the importance of housing wealth and the share of RRE exposures in banks' portfolios, potentially sharp and sudden falls in house prices could trigger a tightening of household consumption and cause banks to suffer increased losses.

Policy mix

- LTV: 60% for secondary homes in Oslo, otherwise 85%. Additional collateral is accepted.
- DTI: 5 times gross annual income. Exemptions are allowed for restructuring existing debt.
- Amortisation requirement: residential mortgage loans with an LTV of above 60% need to be amortised at a rate of 2.5% per annum or the equivalent to an annuity loan with a 30-year repayment period.
- Speed limits: 10% of new mortgage loan volumes per quarter outside Oslo are allowed not to meet regulatory requirements; in Oslo the limit is 8%.
- Stress test: lenders need to make allowance for an interest rate increase of 5 percentage points on total debt. Exemptions are allowed for restructuring existing debt.
- CCyB: during the pandemic, in March 2020, the CCyB rate was lowered from 2.5% to 1%. In June 2021, the Norwegian authorities started to rebuild the CCyB, announcing an increase to 1.5% from June 2022.
- SyRB: 4.5% for all credit institutions authorised in Norway and five subsidiaries in other EEA member countries. This measure introduced in December 2020 concerns changes in the scope and level of an existing SyRB.
- Article 458: minimum risk weight floors of 20% for IRB banks on Norwegian residential real estate exposures. The measure was introduced in January 2021.
- Article 164: minimum loss-given-default value increased to 20% from 10% for all IRB banks in 2014.
- Risk weights requirement: tighter requirements for residential mortgage lending models (probability of default parameters).



Policy assessment

The current policy measures are assessed as being appropriate and sufficient. Against the backdrop of both accumulated and increasing existing vulnerabilities, the mix of borrower-based and capital-based measures (which have both even been strengthened recently), is considered to be both appropriate and sufficient. Nevertheless, if real estate-related risks continue to increase, macroprudential policy may need to be tightened further once the economy recovers from the crisis. In particular, an accumulation of new mortgage loans at just below the current debt-to-income limit may warrant monitoring and a possible tightening of the measure in order to allow for a “prudent margin”. Furthermore, the countercyclical capital buffer, which was released at the beginning of the pandemic, may need to be rebuilt. With the implementation of the Capital Requirements Directive V (CRD V)⁸⁰ into national law in Norway, the adjustment of existing measures and the possible use of new measures such as the sectoral SyRB should be considered. Any changes in macroprudential policy should not, however, be seen as a substitute for changes in other policy areas, which are necessary to reduce incentives for households to take on debt and to address RRE vulnerabilities in Norway effectively and efficiently, without producing excessive costs for the real economy and the financial system. These changes may, for example, include relaxing the regulation which impacts housing supply, or removing interest rate deductibility as it applies to mortgage loans.

3.4 Other ESRB member countries

3.4.1 Austria

Summary

Cyclical position of the housing market: Firm/mature expansion	Policy appropriateness: Partially appropriate
Risk assessment: Medium risk	Policy sufficiency: Partially sufficient
Key vulnerabilities: House price overvaluation, high house price growth, high mortgage lending growth, signs of loosening of lending standards	

Description of vulnerabilities

Following a period of moderate growth of around 3% over the last three years, real house price growth has accelerated since the second half of 2020 to stand at 10.7% in the first quarter of 2021, outpacing growth in real disposable income over the same period. Whereas, in the past, house price growth has been particularly strong in Vienna, most recently the dynamic in

⁸⁰ **Directive 2013/36/EU** of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (OJ L 176, 27.6.2013, p. 338).



the rest of the country has significantly outpaced that in the capital. Estimates by the Oesterreichische Nationalbank point to overvaluation of 13.4% in 2020 and 18.8% in the first quarter of 2021.⁸¹ This is in line with estimates by the European Commission (around 10% to 17% for 2020) and is somewhat lower than estimates based on the price-to-income ratio and the ECB's inverted demand model (about 40% and 23% respectively for 2020). Before the pandemic, the International Monetary Fund (IMF) estimated that house prices were overvalued by 15% to 30%.⁸² Despite the pandemic, house price growth has accelerated since the second half of 2020. However, housing investment was somewhat lower in 2020 and construction prices were higher, which was partly due to higher raw material prices such as wood.

Lending to households for house purchases had increased steadily since 2019 and stood at a year-on-year on average of 6% over the first four months of 2021. Annual growth in nominal new loans for house purchases remained buoyant, standing at 22.9% on average in 2020 and 18.5% on average in the first four months of 2021. According to the Oesterreichische Nationalbank biannual bank reporting data suggests that lending standards were relatively stable. However, a proportion of new loans had characteristics suggesting that the recommendation concerning lending standards made by the national authorities was only followed to some extent, even though the bracket of loans with relatively high mortgage lending ratios slightly declined between the years 2020 and 2021. At the same time, the average maturity used to be around 25 or 30 years, and no lengthening of maturities beyond 35 years has been observed by the authorities. Combined with the fact that about half of the loans are granted to households that are younger than 35 years, this reduces household vulnerabilities, as the period until pension age tends to be longer than the maturity of the loans. However, initial insights from Austria's new regulatory reporting framework on banks' lending standards for residential real estate financing suggest that not all lending can be considered sustainable according to the recommendation. About 50% of borrowers' projects were financed almost entirely through credit, resulting additionally in high mortgage lending ratios. One-fifth of loans have a DSTI ratio exceeding 40%. The authorities are closely monitoring these vulnerabilities and rising systemic risks. In March 2021, 0.4% of total loans and 0.5% of households were still under moratoria. While the IRB risk weights for mortgage exposures were among the lowest among the EEA countries, they increased to 14% in the second quarter of 2021, according to the authorities.

Household indebtedness increased slightly but remained at a low level, representing 87% of income in the fourth quarter of 2020. According to the authorities, homeowners in Austria tend to belong to the wealthier segment of the population, which reduces the risk of overindebtedness. However, about 40% of new loans are being provided at variable interest rates, even though around a quarter of them are short-term, which reduces the volume of variable loans posing systemic risks, according to the authorities. As a legacy, about 10% of the stock of mortgage credit consists of foreign currency loans.

⁸¹ See [Oesterreichische Nationalbank \(2021\)](#).

⁸² See IMF (2021), [Austria: Staff Concluding Statement of the 2021 Article IV mission](#).



Policy mix

- Implementation of the legal basis for legally binding borrower-based instruments (LTV, DSTI, DTI, amortisation criteria) in December 2017.
- Recommendation of (non-legally binding) borrower-based measures by the Financial Market Stability Board in 2018: DSTI of 30-40%. Maturity limits of a maximum of 35 years; equity ratio (i.e. down payment) of a minimum of 20%. In 2020 a new regulatory reporting framework on banks' lending standards was put into place to close data gaps.

Policy assessment

The current policy mix is considered to be partially appropriate and partially sufficient. While the communication on prudent lending standards aimed at addressing the resilience of the financial sector, compliance with these standards is currently not satisfactory. As such, these measures are only partially appropriate and sufficient to address the increasing vulnerabilities, which are related to the high and increasing overvaluation of house prices and the significant share of mortgage loans with variable interest rates. Therefore, the implementation of legally binding borrower-based measures should be considered. In addition, increasing the resilience of the banking sector could help to address the risks that have already accumulated. If resulting vulnerabilities increase further, an increase in the CCyB or the activation of a sectoral SyRB should be considered.

3.4.2 Bulgaria

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Partially appropriate
Risk assessment: Medium risk	Policy sufficiency: Partially sufficient
Key vulnerabilities: Elevated house price growth (residential real estate prices mixed across regions), signs of house price overvaluation, high mortgage credit growth	

Description of vulnerabilities

House prices have grown moderately over the last two years, rising by about 3.4% on average in real terms. In the first two quarters of 2021, their annual growth accelerated to around 7%, which also reflected base effects from the house price decrease in the second quarter of 2020. Different metrics suggest that house prices were undervalued over the last decade, with some increase in the measure from mid-2020 due to the pandemic-related volatility of the explanatory



variables. Estimates by the authorities for the third quarter of 2020 put growth at between 3% and 6%.⁸³

At the same time, annual growth in mortgage loans has accelerated in Bulgaria, from around 3% at the beginning of 2017 to around 13% in the first half of 2021. It is difficult to conclude from the currently available data whether the strong growth in mortgage lending is the result of a catch-up process, an increase in housing supply or renovation activities carried out, for example, for energy efficiency purposes. According to the authorities, the share of new loans with a loan-to-income ratio higher than 6 has increased slightly since mid-2020, while the share of new loans with a loan-to-income ratio lower than 3 rose significantly compared with the period before the COVID-19 crisis. Българска народна банка (Bulgarian National Bank) has recently put into place a survey for lending standards. This is highly appreciated, as it aims to enrich the existing reporting so that it covers all aspects of the ESRB Recommendation on closing real estate data gaps⁸⁴. While data on the LTV ratios of loan stocks, along with data on price-to-income and loan-to-income ratios (including a breakdown by bracket), have been collected quarterly since 2014, indicators such as the LTV or DSTI ratios of new loans have been collected on an ad hoc basis. It is planned to include these data in the regular data collections. According to the authorities, no significant worsening of lending standards was observed based on available quantitative data up until the second quarter of 2021. Whereas, in the first half of 2020, survey respondents (providing qualitative data) reported a tightening of credit standards for loans for house purchases, credit standards were expected to remain stable in the second half of 2020.⁸⁵ The level of non-performing loans in the residential real estate sector in Bulgaria stood at 4.6% in June 2021, with risks being mitigated by the high coverage ratio of these loans (48.1% compared with 25.7% for the EU according to EBA data). According to EBA data, in March 2021, 1.63% of total loans and 1.1% of households' loans were still under moratoria.

Household indebtedness in Bulgaria is fairly low, with the household debt-to-GDP ratio standing at 24% in 2020. According to the European Commission, only 2.6% of the population were owners with a mortgage in 2016, whereas 79.7% were owners without an outstanding mortgage. As a result, overall outstanding mortgage debt in 2016 was 17.6% of GDP.⁸⁶ However, about 98% of loans are at variable rates, making households vulnerable to interest rate changes.

Banks operating in Bulgaria have a relatively high level of own funds. The Common Equity Tier 1 capital ratio reached 24% in December 2020. The high absorption capacity of the banking sector therefore mitigates risks to financial stability that could accumulate if the vulnerabilities related to the residential real estate market continue evolving. Another specific feature of the banking sector is the predominant use of the standardised approach for credit risk exposures, which mitigates potential risks related to residential real estate. The share of risk-weighted assets to total assets has remained at a level above 50%. Accordingly, the effective risk weight of banks using the standardised approach for residential real estate loans to households is 48%, while the effective risk weight of banks using internal ratings is 25%.

⁸³ See Bulgarian National Bank (2020), **Economic Review**, No 4, p. 69.

⁸⁴ ESRB Recommendation **ESRB/2019/3** of 21 March 2019 amending Recommendation ESRB/2016/14 on closing real estate data gaps (OJ C 271, 13.8.2019, p. 1).

⁸⁵ See European Investment Bank (2021), **Central, Eastern and South-Eastern Europe (CESEE) Bank Lending Survey**.

⁸⁶ See European Construction Sector Observatory (2018), **Country profile Bulgaria**, June.



Policy mix

- In 2018, the legal framework for borrower-based measures was completed (LTV, DTI, DSTI).
- CCyB: in March 2020, during the pandemic, the increases in the CCyB rate scheduled for 2020 and 2021 were cancelled and the CCyB rate remained at 0.5%. In September 2021, the CCyB was increased to 1% with effect from 1 October 2022.
- Article 124: stricter criteria relating to exposures secured by mortgages on residential property under the standardised approach. A weight of 35% is assigned to the part of the exposure secured by mortgages on residential property which does not exceed 70% of the collateral value (compared with a ratio of less than 80% under the CRR).
- SyRB: 3% since 31 December 2014.

Policy assessment

The current policy mix is considered to be partially appropriate and partially sufficient. While the moderate rise in house prices is not a cause for concern, mortgage credit growth is very strong, and the number of non-performing loans in the real estate sector is higher than the EU average according to EBA data, although the high coverage ratio of these loans, together with the relatively high level of own funds of banks operating in Bulgaria, is an important mitigating factor.

The positive CCyB rate is an appropriate tool that can help to address the high credit growth while increasing the resilience of the banking sector. From a forward-looking perspective, the introduction of borrower-based measures (LTV limits and at least one income-related instrument) would be appropriate as a pre-emptive measure against the build-up of a spiral between house prices and credit that could evolve in the medium term, possibly fuelled by relaxed lending standards.

3.4.3 Croatia

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Partially appropriate
Risk assessment: Medium risk	Policy sufficiency: Partially sufficient
Key vulnerabilities: Signs of house price overvaluation, elevated house price growth, high mortgage credit growth, signs of loosening of lending standards	

Description of vulnerabilities

House prices have been gaining momentum since 2019, and there are signs of overvaluation. Following a prolonged period of correction (until 2015) and subdued growth (2016-



18), real house price growth picked up at the beginning of 2019 to reach 8.1% on average year on year in 2019 as a whole. While the dynamic remained robust during the outbreak of the pandemic (8.7 % in the second quarter of 2020), it decelerated slightly towards the end of the year (6.7 % in the fourth quarter of 2020). As a result, Hrvatska narodna banka estimates that house prices are diverging from their long-run fundamentals. Recently, real house price growth has decelerated to 4.1% year on year as of the second quarter of 2021.

There are a number of factors on both the demand side and the supply side that may be having an impact on house prices, with the influence of the factors varying across regions.

A significant portion of housing demand in Croatia has been realised by foreign buyers, who originated about 20% of transactions in the coastal areas and up to 40% in Istria in the period from 2017 to 2020.⁸⁷ Although overall transaction activity was lower after the outbreak of the pandemic, the share of foreign buyers remained at pre-crisis levels. In 2020, Croatia also suffered two earthquakes, which hit the Zagreb region. While these events may not have had a significant impact on overall house price levels, they shed light on the construction quality standards of the dwellings built before the 1960s. These had been constructed before the anti-seismic standards were introduced⁸⁸, something that has further reduced the stock of housing to be transacted. Nevertheless, the damage, which is estimated at 23% of the GDP in 2020, may fuel house prices through construction activity and its positive impact on the economy, as this stock is expected to be repaired gradually. Finally, in 2020 the government extended the housing subsidy scheme for first-time buyers. This scheme has been in place since late 2017 and covers a part of annuity repayments⁸⁹, with the duration of subsidies dependent on the number of children, and higher rates being granted in less developed regions. Overall, government subsidies may further fuel demand for owner-occupier housing, leading to higher overvaluation of house prices as well as indebtedness of households.

Although only about one half of housing transactions were realised through bank credit, mortgage credit growth picked up and accelerated in the second half of 2019 and especially throughout 2020, driven by subsidised housing loans. Mortgage credit growth picked up and accelerated in line with house prices. To some extent, this was driven by government-subsidised loans: the share of these increased from 18% in 2019 to 35% in 2020. Another driver of this trend may be that interest rates on loans to households fell from just above 4.5% in 2016 to around 2.7% in 2020.

New data collected on mortgage lending standards suggest that households might be taking out excessive loans in terms of LTV and DSTI values. The first round of data collected suggest that 41% of new loans had an LTV higher than 90% in the first half of 2021. A significant part of these loans were government-subsidised loans, which were typically provided with LTV values of between 90% and 100%. About 10% of new loans had an LTV over 100%. About 22% of new loans might have been granted with an LSTI ratio over 40%, and about 6% of new loans with an LSTI ratio above 50%. About 20% of new loans that had a high LTV (over 90%) and at the same time had high LSTI ratios (over 40%) at origination. In all, 9% of new loans also had maturities of over

⁸⁷ Hrvatska narodna banka (2021), **Financial Stability Report**, No 22, May.

⁸⁸ Hrvatska narodna banka (2021), **Macroprudential Diagnostics**, No 13, February.

⁸⁹ Kunovac, D. and Žilić, I. (2020), **Home sweet home: The effects of housing loan subsidies on the housing market in Croatia**, *Working Paper*, No 60, Hrvatska narodna banka.



30 years, something that may be increasing the riskiness of new loans with high DSTI/LSTI ratios. According to the central bank, subsidised housing loans had higher LTVs and slightly higher LSTIs at origination. Meanwhile, average risk weights for mortgage loans under the IRB approach, which represent about 12% of the market in Croatia, are relatively high, standing at 38% in June 2021. For other credit institutions that follow the standardised approach, average risk weights amounted to 42% in June 2021.

Household indebtedness is low, with mortgage loans gaining significance recently.

Household indebtedness in Croatia is relatively low, reaching 35% of GDP before the pandemic outbreak. In terms of composition, household loans have been distributed more or less equally between general consumer credit and housing loans, each of them accounting for about 17% of total bank loans in 2020. Over the course of 2020 and the first half of 2021, household loans increased in real terms but at lower rates than the loans for housing (by an average of 4.4% year-on-year in 2020, and 1.4% between January and August 2021). This has been the result of a decline in general consumer confidence, which has reduced the intake of general consumer credit, while the government subsidy schemes for mortgage loans have sustained the demand for real estate loans. In relation to the pandemic, about 3% of mortgage loans were under moratoria as of December 2020. During that period, a slight increase in NPLs was observed for consumer loans but less for mortgage loans (owners of the properties hit by the earthquake were treated differently as regards the loan classification).

Policy mix

- DSTI: implicit DSTI limit of 25% for borrowers with below-average income, while for other borrowers the implicit DSTI limit rises with income, as the unseizable part of income is a fixed amount equal to two-thirds of the average annual salary in Croatia (based on the EBA Guidelines on the creditworthiness assessment and the EBA Guidelines on arrears and foreclosure).
- SyRB: 1.5%, defined in accordance with the CRD V.
- Article 124 of the CRR: stricter definition of residential property for preferential risk-weighting.
- Legal framework for borrower-based measures established in 2020 (LTV, DTI, DSTI and maturity limits).

Policy assessment

The current policy measures are assessed as being partially appropriate and partially sufficient. The measure under Article 124 of the CRR and relatively high levels of own funds compared with other EU countries provides an appropriate, albeit limited cushion against the potential materialisation of residential real estate risks in Croatia. However, the quality of the data on lending standards should be ensured as promptly as possible. Given the increasing vulnerabilities stemming from the housing market, which may lead to a spiral between property prices and credit, other borrower-based measures should be activated, at least as preventive measures, and complement the current implicit DSTI limit, which may not be sufficient for



borrowers with above-average income. In this respect, the establishment of the legal framework for borrower-based measures in 2020 is a welcome step forward. From the medium-term perspective, the government subsidies for mortgage loans and the general purpose consumer loans are a source of concern, as they may contribute to increasing overvaluation of house prices and household indebtedness. These policies may have a substantial impact on the accumulation of risks in relation to the residential real estate market in Croatia. Policy adjustments aimed at alleviating this impact would therefore help macroprudential policy to address the build-up of such risks more efficiently, without generating excessive costs for the real economy and the financial system.

3.4.4 Estonia

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities: Signs of house price overvaluation, high house price growth, high (mortgage) credit growth, high growth in household indebtedness	

Description of vulnerabilities

Upward pressure on house prices stems from income growth, savings growth, and a pension system reform. Real house price growth in Estonia was 8.0% in the second quarter of 2021 compared with the year before. According to the Eesti Pank econometric model for measuring overvaluation in the housing market, housing prices were estimated to be somewhat overvalued in the first half of 2021, and it is assumed that they will become more overvalued in the future, although estimates are subject to uncertainty. For a large proportion of households, salaries kept growing, and savings increased during 2020 and the first half of 2021, despite the pandemic. Before the pandemic, there were concerns that salary growth might be higher than productivity growth (GDP is projected to grow by 5-8% in 2021 and by 4-5% in 2022). Indeed, in terms of vulnerabilities, flow vulnerabilities are more pronounced, because the Estonian economy is still growing quite rapidly, although this trend is mainly driven by growth in private consumption. The reaction to increased housing demand has been strong, and many new dwellings have been started since the second half of 2020. This may help to alleviate the high pressure on prices. That said, changes in the second pillar of the pension system⁹⁰ have possibly added some pressure on real estate prices.

⁹⁰ The change from mandatory to voluntary second pillar has prompted households to take sizeable funds out of the pension system in the second half of the year. This may further fuel the increase in activity and prices if some of these funds flow into the real estate market.



Mortgage loan growth has accelerated, supported by favourable credit conditions, and there are additional concerns regarding KredEx⁹¹ loans. Real mortgage loan growth was 3.0% year-on-year in August 2021. Mortgage loan growth in 2020 exceeded both GDP growth and household income growth significantly. This was in contrast to previous years, when it had been in line with both measures. Based on the September 2021 forecast, Eesti Pank expects nominal housing loan growth to stay strong at 9% in the next few years. The demand for mortgages has also been supported by the outlook of continued low interest rates and by banks gradually easing their lending standards and conditions for housing loans. In 2020, the average LTV increased because a higher share of loans were taken out with a guarantee provided by the state foundation KredEx. These loans represent a further cause for concern. In 2021, the share has stabilised at below 30% of all new housing loans. In general, the average values of the DSTI ratio, LTV ratio and maturity have remained stable, but relatively more loans have been taken out with terms and conditions close to the regulatory limits. The flexibility rule in granting loans was not used as much in 2020. However, in the first half of 2021, use of the rule returned to pre-2020 levels. The Estonian banking sector is interconnected with that of other Nordic countries, making it vulnerable to potential spillovers in the event of a downturn in the financial sectors of neighbouring countries.

Household indebtedness is mostly affected by rising mortgage lending. The level of household indebtedness grew by 2.1% year-on-year in August 2021. Household debt to GDP reached 41% in 2020 and the debt-to-disposable-income ratio grew to 72% as mortgage loan growth outpaced GDP and income growth. Mortgages grew faster (9.9%) than overall loans (8.4%) in August 2021 compared with September 2019, the date of the last vulnerability report.

Policy mix

- LTV: all credit institutions operating in Estonia are subject to an LTV limit of 85% (90% if guaranteed by KredEx) for new housing loans.
- DSTI and stressed DSTI: all credit institutions operating in Estonia are subject to a DSTI limit of not more than 50% of the borrower's net income for new housing loans. The DSTI ratio is calculated using either the interest rate in the loan contract (base rate plus margin) plus 2 percentage points, or an annual rate of 6%, whichever is higher.
- Maturity limits: all credit institutions in Estonia are subject to a maximum maturity limit of 30 years for new housing loans.
- Up to 15% of the amount of new housing loans issued in a quarter are allowed to breach the LTV limit, the DSTI limit or the maturity limit.
- SyRB: in May 2020, during the pandemic, the SyRB was fully released from 1%. The SyRB has been replaced by a CCyB in December 2021. The CCyB requirement is going to have two parts, with a base requirement of 1% that will mainly remain unchanged, and a cyclical

⁹¹ KredEx loans are loans with a state guarantee that are offered according to looser lending standards than normal residential real estate loans: the LTV limit is 90% instead of 85%.



requirement that Eesti Pank can raise if the systemic risk coming from the credit cycle increases.

- Article 458: 15% minimum risk weight floor on residential real estate exposures applicable to IRB banks.

Policy assessment

The current measures are deemed to be appropriate and sufficient to address the underlying risks. The current macroprudential policy with regard to residential real estate risks has been considered appropriate and sufficient as long as the upside risks to the residential real estate market remain contained. The capitalisation of banks is strong (with an average of 26% in December 2020), and for larger banks this is further underpinned by the other systemically important institutions (O-SII) buffer requirements and the Article 458 measure for IRB risk weights to RRE exposures. There is also a comprehensive set of borrower-based measures in place. Nevertheless, there are remaining sources of vulnerabilities in the residential real estate market, the developments of which should be monitored closely. This applies especially to growth in loans and in both residential real estate and general consumer credit. The ESRB advised that if loan growth continues to be strong, an increase in the CCyB rate might be necessary. Eesti Pank decided to set the CCyB at the base requirement of 1% in December 2021. Another risk is related to the increased use of high-LTV loans, supported by the KredEx guarantee scheme. A tightening of lending standards, adjustments to the KredEx rules, e.g. regarding access to the KredEx programme, or a tightening of the flexibility rules for the borrower-based measures might be necessary in relation to the KredEx loans. The general DSTI limit could be also tightened if the vulnerabilities keep increasing.

3.4.5 Hungary

Summary

Cyclical position of the housing market: Mature expansion	Policy appropriateness: Partially appropriate
Risk assessment: Medium risk	Policy sufficiency: Partially sufficient
Key vulnerabilities: Signs of house price overvaluation, elevated house price growth, high (mortgage) credit growth, high growth in household indebtedness	

Description of vulnerabilities

House prices in Budapest, which had been considered highly overvalued, slowed down in late 2019 and remained flat or decreased after the outbreak of the pandemic. Outside the capital, real growth in house prices accelerated significantly during 2020 and at the beginning of 2021. Growth in real house prices was close to or above 10% between 2015 and 2019. This



dynamic growth led to significant overvaluation, peaking at 18% in Budapest and 3% in the rest of the country in the third quarter of 2019 according to Magyar Nemzeti Bank estimates. Since the beginning of 2020, price dynamics have changed significantly in individual parts of the country. In Budapest, real house prices started declining slightly year-on-year from the second quarter of 2020. Meanwhile, outside the capital, real annual price growth accelerated significantly, peaking at 16% in the second quarter of 2020. Areas which proved relatively resilient in terms of housing prices were those eligible for government house purchase subsidies, particularly rural areas. As of the end of 2020, Magyar Nemzeti Bank has revised its overvaluation estimates to 11% in the capital and 2% elsewhere. At the beginning of 2021, real growth in house prices remained slightly negative in Budapest (-1%) according to Magyar Nemzeti Bank estimates, while data for smaller municipalities suggest a further acceleration to 20.5%.

From a forward-looking perspective, a return of international tourism will be an important determinant of house price developments, along with various government subsidy programmes.

After the outbreak of the pandemic, dwellings allocated for short-term rentals, which were used by foreign tourists and considered one of the main drivers of previous price increases in the capital, were converted into longer-term rental contracts after the outbreak of the pandemic and the related travelling restrictions. This contributed to the decline in rents of 14% year-on-year as of January 2021⁹². Regarding the government subsidy programmes, starting from January 2021, the government introduced a number of measures aimed at supporting families. The most important of these are the exemption from purchase duty, the right to reclaim the 5% value added tax for those who purchase their home with the home purchase subsidy, and a subsidised home improvement programme which provides further fiscal support to households already involved in the home purchase subsidy programme. In addition, there is the prenatal baby support loan. This interest-free loan is part of the government's family support scheme but it can be used for any purpose. Transactions increased by 28% and 20% respectively during the first and second months of 2021, when the new subsidy was in place (compared with January and February 2020, i.e. the periods not yet effected by the pandemic). Overall, government subsidies and support loans may fuel additional demand for owner-occupied housing, leading to higher overvaluation of house prices and greater household indebtedness against the backdrop of an insufficient supply of housing. Meanwhile, a preferential VAT rate for new construction, which was reintroduced from January 2021 and which provides benefits relating to dwellings finished by 2026 (with permits issued by 2022), may reduce demand pressures on house prices in the medium term. The number of new building permits for residential real estate has started to increase again from 2021. However, the rental market in Hungary is relatively underdeveloped, which may be an additional source of pressure on prices of owner-occupied housing.

Mortgage credit continued to grow robustly in 2020. The mortgage stock grew by 5.6% in real terms in 2020, a rate just below the average of 5.8% over the last three years. The existing subsidy programmes (the house purchase subsidy and the prenatal state support) may be one of the drivers of this trend, accounting for 11% of loans to households⁹³. Over the period from January to August 2021, growth in real mortgage loans accelerated slightly to 6.8% on average. The new subsidy programme from the beginning of 2021 could be playing a role in these developments.

⁹² See Magyar Nemzeti Bank (2021), [Housing Market Report](#), May.

⁹³ See Magyar Nemzeti Bank (2021), [Financial Stability Report](#), June.



However, despite the lending dynamics, banks' exposure towards residential mortgages remained limited, which to some extent mitigates risks related to credit losses from mortgage loans.

Legally binding borrower-based measures, which have been in place since 2015, have contributed to the prudent characteristics of both new and existing lending. Although mortgage loans were provided with very high LTVs prior to 2008, the LTV ratio of most of the loan stock is currently less than 80% (the share of mortgage loans with LTVs above this threshold is very low, standing at 10%). To some extent, this has been the result of high house price growth and old loans being amortised. It is also due to the quality of new loans, the LTVs of which have been capped at 80% since 2015. As regards the DSTI ratio, about 22% of existing mortgage loans and more than 24% of mortgage loan disbursements (in terms of volume) in the first half of 2021 have DSTI values between 40% and 60%. This has partly been the result of the higher DSTI limits applied to lower-risk, high-income borrowers, whose share in new lending has been growing: in the first half of 2021, about 60% of housing loan borrowers were eligible for a higher DSTI limit (the DSTI limit can be as high as 60% for borrowers with monthly net income above the median of €1,400).

Household indebtedness grew at a record pace in 2020, partly due to the high share of credit for which a derogation has been granted in respect of repayments. Growth in real household credit has significantly outpaced that of mortgage loans, reaching almost 11% year-on-year in August 2021. To some extent, this has been the effect of a significant share of household loans being under moratoria and therefore not being amortised: this share stood at about 31% of total RRE loans (42% of eligible RRE loans) as of June 2021. Nevertheless, mortgage credit growth warrants careful monitoring, especially considering the DSTI values of debtors and economic uncertainty. On the positive side, there has been strong take-up of loans with five and ten-year fixed interest rates following a certification scheme introduced by the central bank in 2017 to promote loans with relatively long interest rate fixation⁹⁴. This is only available for housing loans with an interest rate fixation period of at least five years and for borrowers with lower DSTI values in the case of loans with an interest rate fixation period shorter than ten years. As of February 2021, about 75% and 25% of new loans were fixed for periods of ten and five years respectively. However, taking into account the stock as a whole, loans with a fixation period shorter than one year still represent 39% of credit. The loan moratorium in Hungary has recently been extended until June 2022. Although the eligibility criteria have been tightened, the moratorium may still potentially cover a substantial proportion of household borrowers. The large share of household debt under moratoria and increased debt levels raise questions about households' debt servicing capacity, particularly in the event of uncertainties regarding future income or interest rates. According to the central bank analysis, household loans under moratoria of borrowers who are employed in vulnerable sectors account for 10% of all outstanding loans.

Policy mix

- LTV: limit of 80%, which may be further lowered to 35%, depending on the currency and interest rate fixation period.

⁹⁴ See Magyar Nemzeti Bank (2017). [Financial Consumer Protection Report](#).



- DSTI: limit of 50% (60% for higher-income households), which may be further lowered to a minimum of 25%, depending on the currency and interest rate fixation period.
- SyRB: in March 2020, during the pandemic, the SyRB was temporarily suspended until 2021.

Policy assessment

The current macroprudential policy measures are assessed as being partially appropriate and partially sufficient. Against the backdrop of overvalued house prices, with the potential for a downward correction, the quality of the existing loan portfolio is key. In such circumstances, the distribution of existing loans in Hungary in favour of conservative LTV values should provide a sufficient cushion for the banking sector to absorb losses that could materialise, which shows the importance of introducing borrower-based measures in a pre-emptive way. However, in the event of adverse economic and financial developments, borrowers with high DSTI values may need to reduce consumption in order to withstand the stress, something that may further weigh on the economic downturn. One current source of concern is the prolongation of the relatively broad-based loan moratorium, which may not allow for the proper monitoring of risk materialisation and therefore provisioning, although the ESRB acknowledges that the increase in credit risk is being reflected in the ratio of stage 2 loans according to the central bank. In particular, some of the borrowers who currently use the moratorium may face difficulties in servicing their debt in the event of income or interest rate shocks. From a medium-term perspective, if the adverse economic scenario does not materialise and residential real estate vulnerabilities keep increasing, a tightening of the DSTI limit, accompanied by maturity limits and/or the introduction of a sectoral SyRB or CCyB, would be warranted. With respect to the medium-term outlook, government subsidies and support loans are also a source of concern, as they may contribute to increasing overvaluation of house prices and household indebtedness. These policies may have a substantial impact on the accumulation of risks in relation to the residential real estate market in Hungary. Policy adjustments aimed at alleviating this impact would therefore help macroprudential policy to address the build-up of such risks more efficiently, without generating excessive costs for the real economy and the financial system. In this respect, ensuring an environment that allows for sufficient supply, along with measures to help the rental market function more effectively, such as reinforcing the legal basis, could also alleviate part of pressure on housing and mortgage credit demand.



3.4.6 Ireland

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities: Elevated but declining household indebtedness	

Description of vulnerabilities

Household indebtedness remained elevated despite a continuous and consistent deleveraging process.

The last three years have been characterised by the continuation of the deleveraging process that began after the global financial crisis. The real rate of growth in loans to households has been negative and is gradually decreasing, despite some signs of a reversal in the trend during the pandemic. Debt as a percentage of household disposable income has also continued to decline during the pandemic, reaching the lowest level of 104.4% during the fourth quarter of 2020 (a significant decrease from 122.4% during the first quarter of 2019), thanks in part to income support measures implemented by the national authorities (which mainly benefited the already highly indebted households). Along the same lines, the debt service ratio of Irish households has improved, with the lowest level of 12.8 % recorded during the fourth quarter of 2020. Nevertheless, the Irish debt service ratio and debt as a percentage of disposable income are still among the highest in the EEA.

Along with the strong increase in building activity, real growth in house prices has slowed down over the last two years. However, persistent undersupply of housing could potentially reverse the trend and ignite strong price growth dynamics.

After a strong, prolonged rebound in house prices in the aftermath of the global financial crisis, real house price growth slowed to rates below 2% year-on-year in 2019 and remained muted throughout 2020, before moving up to around 3% in the first quarter of 2021. It then accelerated sharply in September 2021 according to the Central Bank of Ireland. Owing to severe mobility restrictions, which were imposed because of the pandemic, the year-on-year rate of growth in building permits registered a significant contraction in the second quarter of 2020 (-29.2%). This was immediately after the record increase of 97.3% in the first quarter of 2020, which was reached after a persistent surge. According to Central Bank of Ireland estimates, housing supply in the country still lags behind demand, which is increasing strongly. The lack of housing supply, if persistent, might eventually contribute to increasing house price growth. From a forward-looking perspective, the significant presence of institutional investors in the real estate market in Ireland and the uncertainty related to the commercial property segment may mean that investors will gravitate towards residential property to an increasing extent, with an uncertain impact on house price growth.

During the last three years, real growth in lending into the real estate segment has remained negative and has gradually decelerated. However, an increasing share of loan transactions are taking place at or below regulatory limits. The real growth rate of mortgage loans has been negative



since 2019 and is gradually decreasing. Bank exposures to real estate as a percentage of Common Equity Tier 1 capital have stabilised at around 200% since the beginning of 2019. In addition, the current NPL ratio for mortgage loans stands at 5%, the fifth highest among EEA countries, which is a legacy of the boom in the Irish real estate market before 2008 and the subsequent global financial crisis. In 2020, lending standards for new mortgage loans remained broadly in line with those of 2019. In particular, as observed by the Central Bank of Ireland, during recent years an increasing share of new loan transactions have taken place at or just below the maximum available LTV and loan-to-income (LTI).

Policy mix

- LTV: 70-90%, differentiated according to the type of borrower (first-time buyers: 90%; second-time and subsequent buyers: 80%) or to the purpose of the acquisition (buy-to-let properties: 70%); range of exceptions defined for each category.
- LTI: 3.5 times gross income; range of exemptions defined.
- CCyB: in April 2020, during the pandemic, the CCyB rate was fully lowered from 1% to 0%.
- Article 124: stricter criteria for preferential weighting of residential mortgage loans. The property needs to be owner-occupied and the LTV must not exceed 75%. In November 2021, the Central Bank of Ireland decided to discontinue the Article 124 measure.

Policy assessment

The current measures are deemed to be appropriate and sufficient to address the underlying risks. The set of borrower-based measures in place in Ireland since 2015 have helped to improve the resilience of the financial system, working in tandem with the capital-based measures. As discussed by the Central Bank of Ireland⁹⁵, the COVID-19 shock has been the first test of the macroprudential framework in place in the country. Households and the financial system entered the crisis with a better outlook than in the global financial crisis and they proved to be resilient against the pandemic shock. This result shows that the set of measures in place are sufficient and appropriate to tackle the vulnerabilities accumulated in the system. In its latest Financial Stability Review, the Central Bank of Ireland announced that it is conducting a multi-year review of the macroprudential framework (such a review was already announced in 2019 but put on hold due to the pandemic). This should be an opportunity to examine the accumulation of new loans just below the regulatory limits and to potentially consider a recalibration of borrower-based measures if needed, depending on the development of vulnerabilities in the meantime and on broader structural changes in the economy and financial system. If cyclical risks pick up, the authorities could consider increasing the CCyB as appropriate and/or use targeted capital-based instruments such as the sectoral systemic risk buffer to increase banks' resilience to residential real estate-related vulnerabilities.

⁹⁵ See Central Bank of Ireland (2021), [Financial Stability Review](#).



3.4.7 Liechtenstein

Summary

Cyclical position of the housing market: Mature expansion	Policy appropriateness: Partially appropriate
Risk assessment: Medium risk	Policy sufficiency: Partially sufficient
Key vulnerabilities: Elevated household indebtedness	

Description of vulnerabilities

Activity in the residential real estate market has remained muted over the last few years.

Because of legal restrictions on the purchase of real estate (in the absence of a legitimate interest, e.g. in the case of already existing property), the level of market activity is very low in Liechtenstein. In fact, around half of all real estate transactions are not purchases but transfers by barter, donation or heritage. Due to the low level of market activity, there are no price indices available. Nevertheless, price data from expert assessments indicate only moderate price increases in the case of both land (2.5% on average in nominal terms since 2000) and apartments (1.1% on average in nominal terms since 2000). This suggests that the housing market in Liechtenstein is not overheating. According to the Liechtenstein Financial Market Authority (FMA), building activity has also remained stable over the last few years, with the total number of construction projects standing at 608 in 2020, far below the level reached in 2009 (921).

Mortgage credit growth has declined in recent years, with lending standards remaining stable.

According to the FMA, mortgage growth in the Swiss franc currency area (including residential real estate and other real estate) has recently been on a declining trend and stood at 0.7% in 2019 (down from 8.8% in 2010), with a slight uptick to 2.5% in 2020. Annual growth in domestic residential real estate loans was even weaker, amounting to 1.1% in 2020. As for lending standards, according to the FMA, the LTV ratios of Liechtenstein banks have remained relatively prudent. Only 1% of the stock of residential real estate mortgages have an LTV higher than 80%, while the share of new loans with an LTV ratio of more than 80% is negligible, standing at virtually 0% in the last two years. Banks are also required to report loans as “exceptions to policies” whenever an interest rate increase to 4.5% or 5% would imply a debt service burden of more than one-third of the borrower’s annual household income. While the assumptions underlying this “mini stress test” are quite severe in the light of the current low interest rate environment and the history of low interest rates in the Swiss franc currency area, around 23% of total residential real estate loans in Liechtenstein belong to this “exception to policy” category. The total volume of domestic residential real estate loans amounted to roughly 85% of GDP in 2020, which is one of the highest ratios in the EEA. However, while Liechtenstein’s banking sector corresponds to roughly 15 times the country’s GDP, mortgage loans do not constitute the main determinant for profitability, as banks mainly focus on private banking services. At the same time, Liechtenstein’s banking sector is well capitalised relative to its European peers and largely independent from wholesale funding thanks to an extremely low loan-to-deposit ratio.



The high household indebtedness is the main source of systemic risk in Liechtenstein. The FMA estimated that household indebtedness in Liechtenstein was 226%⁹⁶ and 120% of disposable income and GDP respectively in 2020, putting Liechtenstein among the countries with the highest household indebtedness in the EEA. Household indebtedness in Liechtenstein has recently been trending upwards, mainly as a result of the low interest rate environment and because of perceived tax incentives. Indeed, the tax base for households also includes a hypothetical yield on net wealth (currently set at 4%), which is added to annual earned income. In order to reduce their net wealth, many households keep their mortgage instead of repaying it, although, in fact, the tax incentive is quite small in practice, particularly considering the interest rate on non-amortised debt that still needs to be paid. An analysis conducted by the FMA based on data from tax statistics shows that indebtedness is unevenly distributed across households. About 42% of households have no debt, while another 13% have debt lower than CHF 100,000. At the top of the distribution, 14% of households report debt of between CHF 500,000 and CHF 1 million, while 9% of households – or almost 1,500 households in absolute terms – still have debt exceeding CHF 1 million. Furthermore, preliminary analysis suggests that the share of households with a DTI ratio higher than 5 is comparatively high, suggesting that high household indebtedness is not always accompanied by high household income. In the current environment, in which interest rate risk is tilted to the upside, the high share of fixed interest rate mortgages is an important risk mitigant, as it implies that an abrupt interest rate increase would not affect Liechtenstein’s households immediately, but only gradually over time. In addition, the labour market has been highly resilient over the past decades, even during recessions. This has allowed a high degree of planning certainty for the household sector in Liechtenstein in terms of household income, implying that the sustainable level of household debt may be higher than in other countries. Furthermore, the overall level of debt in the economy is very low, thanks to an extremely sound public sector, while household wealth in Liechtenstein is relatively high, particularly among highly indebted households. Structural characteristics in the real estate market related to legal restrictions on the purchase of real estate as well as immigration restrictions imply additional room for manoeuvre in the event of a crisis. Nevertheless, the high indebtedness makes the household sector vulnerable to other unexpected macroeconomic shocks.

Policy mix

- LTV: limit of 80%. Exceptions are allowed, but banks have substantially higher reporting requirements for the corresponding loans.
- Banks also have to report loans as “exceptions to policy” whenever an interest rate increase to 4.5% or 5% would imply a debt service burden of more than a third of the annual household income.
- Amortisation requirement: households are required to amortise their mortgage to a maximum LTV ratio of 66% within 20 years.

⁹⁶ The debt-to-income and debt-to-GDP ratios for Liechtenstein are only approximatively comparable to those of other countries. Disposable income in Liechtenstein is calculated as the difference between total taxable income and the wealth and income tax. In addition, the total household debt figure is based on tax statistics, and debt is not defined on a consolidated basis (i.e. credit within the household sector or even within the family is also included). This definitional issue inflates the headline number relative to other countries.



- Article 124: the risk weights for mortgages with an LTV between 66% and 80% are set at 50% (instead of 35%, as in the “standard” CRR framework).
- SyRB: 1-2% of risk-weighted assets, which applies to six banks.

Assessment

The current measures are deemed to be partially appropriate and partially sufficient to address the underlying risks. The mix of borrower-based and capital-based measures in place is aimed at addressing the stock and flow risks which are related to the high household indebtedness. In addition, Liechtenstein authorities have recently started to make efforts to increase the risk awareness of both borrowers and lenders, and to discuss with representatives from the banking sector how to address these risks in the most efficient way in the medium term. However, the existing LTV limit should be accompanied by at least one income-related instrument to address these risks in an appropriate and sufficient way. To this end, a legal basis for borrower-based instruments may need to be created, providing flexibility to react swiftly to the type and intensity of the risks. To date, important data relevant for an analysis of RRE vulnerabilities have been missing for Liechtenstein. The FMA is currently implementing the ESRB Recommendation on closing real estate data gaps. The new data that will be available in the course of 2022 are expected to provide a deeper and more granular insight into the development of the residential real estate and mortgage market in Liechtenstein, which may then need to be reassessed.

3.4.8 Lithuania

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities: Elevated house price growth, elevated (mortgage) credit, elevated growth in household indebtedness	

Description of vulnerabilities

House prices continued to grow in 2021, while estimates indicate a rise in overvaluation.

House prices grew 8.3% year-on-year in real terms in the first quarter of 2021. Estimates point to a sharp increase in overvaluation in the fourth quarter of 2020. This comes after several years of negative or only slightly positive overvaluation due to incomes rising faster than house prices. Savings increased significantly during the COVID-19 crisis, and conservative investment choices, such as cash deposits and housing, are preferred in Lithuania. This can also result in upward pressure on housing prices. Meanwhile, the economy is expected to grow at 4.9% in 2021, while unemployment is expected to decrease from 8.6% in 2020 to 7.2% in 2021, and to 6.8% in 2022.



Moderate economic growth combined with moderately high unemployment can alleviate the pressure on house prices.

Mortgage loans are still growing at pace, although a significant share of homes are purchased with own funds. Mortgage lending continues to grow rapidly, at 5.7% year-on-year in August 2021, and lending standards were eased slightly during the pandemic after an initial tightening. Meanwhile, an increasing share of residential real estate purchases are being made using own funds. Only 40% of house purchases are made with a mortgage, but in euro terms they make up 60% of the purchase prices of all house purchases.

Household indebtedness has been increasing steadily. In terms of GDP, household indebtedness remained stable at 24.5% in the first quarter of 2021, but mortgage credit as a share of overall credit increased. The real annual growth in residential real estate loans was 5.7% in August of 2021, whereas the growth in total loans was 3.3% during the same period. That said, the time needed to save money to purchase a home has decreased steadily over the last ten years. Interestingly, 20% to 30% of transactions are not carried out to purchase a first apartment but for buy-to-let purposes.

Policy mix

- LTV: The LTV of new housing loans cannot be more than 85%. DSTI, stressed DSTI: a stressed DSTI limit of 50% has been introduced (alongside the usual 40% limit), with a 5% interest rate used in the stress test. Overall, the DSTI is capped at 60% for the amount of housing loans that is not higher than 5% of the total value of new housing loans granted by the same credit provider during a calendar year.
- Maturity limits: 30 years for new housing loans.
- On 28 September 2021, Lietuvos bankas announced measures to strengthen the down payment requirement for second and subsequent housing loans (LTV limit of 70% if the LTV ratio of the borrower's former housing loans is still over 50%) and to apply an additional capital buffer (sectoral SyRB) of 2% for housing loan portfolios to complement the CCyB (which is currently 0%), effective from 1 July 2022.

Policy assessment

The current measures are deemed to be appropriate and sufficient. The current macroprudential policy with regard to residential real estate risks has been considered appropriate and sufficient as long as the upside risks to the residential real estate market remain contained, especially house price and mortgage lending growth. Nevertheless, there are strong dynamics in the market, and these require monitoring. If residential real estate lending growth continues, along with the solid economic recovery and recovery in lending to non-financial corporations, it would be important to consider increasing the CCyB rate back to 1%. The issue of prospect selling could be contained with tax measures or increased down payment requirements to dampen speculative demand that may contribute to the build-up of a house price bubble.



3.4.9 Malta

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities: Elevated housing credit growth, elevated household indebtedness	

Description of vulnerabilities

After moderate house price increases of around 4-5% year-on-year in 2019 and the first quarter of 2020, house price growth decelerated to around 2% from the second quarter of 2020 until the end of the year before rising to 4.6% in the second quarter of 2021, a rate below the EEA average. The COVID-19-related moderation in house price growth in 2020 accompanied a decline of about 40% in the number of dwelling permits and a decrease in residential investment of about 30% year-on-year, despite several tax and duty reduction schemes put in place in June 2020 to facilitate the acquisition of immovable property in the context of the pandemic.⁹⁷ Model based estimates point to undervalued house prices, while the price-to-income indicator points to overvaluation. According to the authorities, their house price misalignment index indicates that house prices are currently in line with fundamentals. An alternative price-to-income ratio, which is calculated using advertised house prices, is currently below the long-term average.

After hovering around 6% year on year until the end of 2018, mortgage loans to households increased to about 8% in the first quarter of 2020, before declining during the pandemic and rising again in 2021. On average, annual mortgage lending growth stood at 7% in real terms in the last three quarters of 2020 and the first quarter of 2021. In the second and third quarters of 2021, the real mortgage credit dynamic accelerated to an average of 8.8% year-on-year. Overall, the rebound in mortgage lending in 2021 was due in part to the lower base effect from 2020 and also to the frontloading of mortgage loans in relation to temporary government tax incentives (these incentives were intended to support the recovery of the real estate market in relation to the pandemic). According to the authorities, survey data suggest that overall, core domestic banks became more prudent and tightened their lending standards for the first three quarters of 2020. The share of loans with an LTV ratio exceeding 80% declined, with reported loans being concentrated in the 60-80% LTV bracket, the share of loans with an LSTI ratio of about 35% decreased to almost zero, and loans shifted to the LSTI bracket between 10% and 30%. About 45% of new mortgage loans were in the LTV bracket between 80% and 90% in the first three quarters of 2020. Authorities stress-tested households' LSTI ratios with an interest shock of 150 basis points, and the results showed that the share of loans with LSTI ratios exceeding 40% had decreased, standing at a very

⁹⁷ The measure has been extended by four months to be applicable to transfers made (or transfer agreements in place) by 31 July 2021. See KPMG (2021), **Extension of the Reduced Tax and Duty Schemes on transfers of immovable property.**



low level of 1.4%. According to the authorities, some market players expect a slowdown in mortgage credit growth owing to a tightening of borrower-based measures in mid-2021.

Non-performing loans in real estate activities represent a more general vulnerability in

Malta. The household debt-to-GDP ratio increased in Malta from below 50% on average in 2019 to almost 55% in the fourth quarter of 2020 and was close to the EU average. However, in the category of total real estate activities – which goes beyond purely household real estate activities – non-performing loans represent about 10% of total loans, and the percentage of mortgages taken out by workers in job retention schemes is the highest among the EEA countries. Meanwhile, the NPL ratio for the construction sector has been on a declining trend and currently stands below pre-pandemic levels. Even though these vulnerabilities represent indirect risks to the Maltese RRE sector, these developments should be closely monitored as it is not yet possible to assess whether they represent a catching-up process after the previous under-reporting of non-performing loans owing to the pandemic related lockdown.

Policy mix

- LTV: limit of between 75% and 90% according to the category of borrower, enacted in July 2019. In June 2020, during the pandemic, the Central Bank of Malta granted an extension until 30 June 2021 for the reduction in LTVs to 75% from 85% for category II borrowers, i.e. those borrowers taking a loan for a secondary residence or buy-to-let.
- DSTI: limit of 40% with interest rate stress test (+1.5 percentage points), enacted in July 2019. In June 2020, during the pandemic, the limit was relaxed for six months, provided that the reason for the failure to meet the payment obligation was temporary.
- Maturity limit: between 25 and 40 years according to category of borrower enacted in July 2019.
- Article 124: stricter risk weight applied, with 35% risk weight for loans having an LTV at or below 70%, as opposed to the 80% LTV set out in the CRR, with the rest assigned a 100% risk weight.
- Banks are required to set a medium to long-term target for non-performing loans not to exceed a threshold of 6%. In the event that this is exceeded, a credit institution is to draw up a multi-year reduction plan for reducing the share of non-performing loans.

Policy assessment

The current policy mix is considered to be appropriate and sufficient. The borrower-based measures put in place in 2019 and their potential adjustment once the data on compliance with the related directive have been collected and analysed are deemed appropriate to prevent the accumulation of risky loans, given strong housing lending dynamics. Tightening of the LTV limit, which was postponed due to the pandemic but is now fully operational again, will further contribute to the sufficiency of these measures. The risk stemming from the level of household debt is addressed by the Article 124 measure which involves the application of more stringent criteria to



risk weights for RRE exposures than those established in the CRR. Nevertheless, the risk situation should be monitored, particularly with respect to the share of non-performing loans in the real estate and household sectors. Depending on the analysis, an adjustment of risk weights or the introduction of a sectoral SyRB or CCyB could be considered.

3.4.10 Poland

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities: Elevated house price growth, stock of foreign exchange loans	

Description of vulnerabilities

Real estate prices have accelerated over the last few years without suffering any significant slowdown during the pandemic. However, house prices do not appear to be overvalued.

Since the end of 2018, the real growth rate of house prices has increased, additionally supported by a reduction in the rate of growth in building permits granted and increasing demand for dwellings. In the largest cities in particular, housing shortages on the supply side have placed additional upward pressure on house prices. The increase in real estate prices has withstood the COVID-19 shock, with a real increase of 7.0% year-on-year during the second quarter of 2020, although the rate slowed at the end of the year due to mobility restrictions imposed during the second wave of infections. According to Narodowy Bank Polski, the number of transactions also declined for the same reason. Currently, overvaluation metrics such as the inverted demand model and the price-to-income ratio do not signal any overvaluation, mostly because house price growth was below growth in household disposable income until mid-2018.

After a stable real growth rate of around 4% between 2018 and 2019, lending to households for house purchases declined significantly during 2020. Between 2018 and 2019 the year-on-year increase in loans to households measured in real terms averaged around 4%. This was in an environment characterised by one of the highest costs of borrowing in the EU and stable lending margins for banks. Starting from the second quarter of 2020, the rate of year-on-year real growth in lending to households entered negative territory, signalling a tightening of the lending standards applied by banks. Nevertheless, housing demand is expected to remain strong due to rising wages, a low interest rate environment and favourable labour market conditions. Starting from June 2021, a new regulation was introduced. According to the new requirements, all banks must make “quasi-fixed-rate” mortgages available.



The resolution of the legal issues related to legacy foreign currency loans could have a significant impact on the banking sector.⁹⁸

There is uncertainty over the stock of foreign currency loans denominated in Swiss francs. Even though banks stopped providing these loans in 2011, litigation by borrowers has increased during the last few quarters, and the regulatory bodies are discussing how to resolve the legal issues. At the current stage, according to Narodowy Bank Polski, there are numerous possible resolution scenarios, and the costs associated with each of them vary between moderate and very high for banks. Some banks have been making provisions against this risk to an increasing extent, even though the current size of provisions differs across banks. While an appropriate provisioning is needed in view of a potential materialisation of the risk, it could also be associated with wiping out banks' earnings and have consequences on banks' provision of credit. Developments regarding any settlement procedure between banks and borrowers established by Poland's Supreme Court need to be closely monitored to assess the impact on the banking sector's stability.

Real growth in household indebtedness has declined since the second half of 2019, while household debt as a percentage of GDP and disposable income has remained stable. Polish households are also exposed to interest rate risk, as most of the mortgage loans are variable rate. During 2019 the real growth rate of household debt stabilised at around 4% year-on-year, before starting a downward trend at the beginning of 2020 and reaching negative territory at the end of the year (-0.8% in the fourth quarter of 2020). At the same time, household debt as a percentage of both GDP and disposable income remained stable, standing at around 35% and 55% respectively. Polish households are significantly exposed to interest rate risk. In the fourth quarter of 2020, variable rate loans accounted for 94.5% of the total, although this was down from the previous level of 100% at the beginning of 2020.

Policy mix

- LTV: 80% standard limit; 90% if the portion above 80% is insured or collateralised with funds in bank accounts, government or NBP securities, or Individual Retirement Account (IKE)/Individual Retirement Protection Account (IKZE) pension accounts
- DSTI: soft recommendation; 40% for borrowers whose salary is below average, 50% for others.
- Maturity limit; 25 years for residential mortgage loans. Banks can issue loans with a maturity up to 35 years but are required to assess borrowers' ability to repay these loans as if they were 25-year loans.
- Stress test: 20% depreciation if a household obtained the loan in a currency different from that of the household income. However, the Polish Mortgage Loans Act formally forbids the practice of granting foreign currency loans to households.
- Interest stress test: banks must assume interest rates of at least 250 basis points above current market values when calculating borrowers' creditworthiness.

⁹⁸ See Narodowy Bank Polski (2021), **Financial Stability Report**, December.



- SyRB of 3%: suspended during the COVID-19 crisis.
- Article 124: 150% risk weight for foreign currency loans for residential real estate exposure.

Policy assessment

The current measures are deemed to be appropriate and sufficient to address the underlying risks. Both capital-based and borrower-based measures are in place in Poland. These consist of risk weight measures for the RRE exposures of institutions using the standardised approach for calculating capital requirements and foreign currency loans, together with LTV, DSTI and maturity limits in the form of recommendations. Nevertheless, the DSTI limit is a soft measure. Banks are allowed to set their own internal DSTI limits, paying particular attention to loans for which the DSTI exceeds 40% or 50% (if the borrower's income is below or above the average respectively). Similarly, for mortgage terms, banks may only recommend that borrowers take out loans with maturities lower than or equal to 25 years, and they must calculate the DSTI values of the borrower's creditworthiness with that length as the maximum. Since it reduces the interest rate risks for borrowers, the interest rate stress test requirement⁹⁹ is considered appropriate given the high share of foreign currency loans provided in the past (although provision of foreign currency loans has recently ceased altogether). Overall, given the relatively slower growth in vulnerabilities in Poland, the existing risk weight measures, and the fact that the LTV limits are calibrated quite conservatively, the policy mix is currently considered appropriate and sufficient. Nevertheless, national authorities should pay particular attention to existing foreign currency loans. These are being converted to the national currency with significant risks to the banking sector. In addition, if the vulnerabilities keep increasing, national authorities should also consider the introduction of an explicit DSTI limit in order to pre-empt the build-up of risks. The national authority may also consider the introduction of a sectoral SyRB to expand its macroprudential toolkit with capital-based measures.

⁹⁹ This consists of a depreciation in the currency and is applied to loans for which the borrower's income is in a different currency from that of the loan in question.



3.4.11 Portugal

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities: Elevated house price growth, elevated albeit declining household indebtedness, signs of loose lending standards for new housing loans in terms of interest rate spreads	

Description of vulnerabilities

House prices in Portugal have been growing significantly over the medium term, and they are currently estimated to be overvalued. Following a period of correction after the 2008 financial crisis, real house prices have been on an upward trend since the beginning of 2016, growing steadily at rates of between 6% and 11% year-on-year. While part of this dynamic can be attributed to previous undervaluation, estimates conducted by the Banco de Portugal suggest that house prices became overvalued again in 2018¹⁰⁰. However, the ECB's model-based estimates suggest that the overvaluation declined to 6% in the fourth quarter of 2020 and the first quarter of 2021. Both estimates are subject to considerable uncertainty, not least because they do not take into account some of the drivers of house prices such as demand by non-residents and demand for real estate in relation to tourism activities.¹⁰¹ Assuming this demand is stable, its omission from the estimates would mean that the actual overvaluation is lower. However, this assumption needs to be treated with caution, especially in the context of the current pandemic and the implications for international tourism, despite its gradual recovery.

In 2020 and the first half of 2021, house price growth remained high, notwithstanding the pandemic. Average growth in real house prices was 8.6% in 2020, compared with 9.3% in 2019. Real growth rates decelerated slightly to 5.1% and 6.5% respectively in the first and second quarters of 2021. There are also other indicators suggesting that the Portuguese housing market has remained highly resilient in the face of the COVID-19 shock. The number of transactions decreased by 22% in the second quarter of 2020 but was back at 2019 levels in the third and fourth quarters of 2020. While short-term rentals earmarked for tourists put downward pressure on rental prices – which grew at a slower rate than house prices in 2020 and the first quarter of 2021 – anecdotal evidence suggests that these short-term rentals were converted into fixed-term contracts with longer duration during the period of restrictions related to the pandemic. Looking ahead, the increasing number of building permits granted from the end of 2020 suggests that a growing supply of dwellings may help alleviate the demand pressures on house prices.

Mortgage credit has not been the main driver of house price increases so far, but it has been picking up recently. The stock of mortgage credit grew by 2.4% in real terms in August 2021. On

¹⁰⁰ Banco de Portugal (2019), "Special feature: Housing price assessment methodologies applied to Portugal", *Financial Stability Report*, December.

¹⁰¹ Ibid.



the one hand, the muted growth is in line with the fact that only around 40% of housing transactions are financed by domestic credit in Portugal, a rate that has remained broadly unchanged since 2017 (up from the 20-30% observed between 2012 and 2015, but down from the previous 60-70%)¹⁰². On the other hand, the recent growth rates have been positive and in 2020 they increased for the first time since 2015. This may be a sign that the trend is reversing and the domestic mortgage market is recovering.

Borrower-based measures in place since 2018 have had an impact on the lending standards for mortgage credit provided in Portugal. The introduction of borrower-based measures in 2018 has reduced the share of new loans provided with high loan-to-value or DSTI ratios. Meanwhile, the share of new loans with an LTV over 90% decreased from more than 20% in July 2018 to almost nil from mid-2019 onwards. The share of new loans with LTVs of over 90% or stressed DSTIs of over 60% decreased from 35% to less than 5% over the same period. Meanwhile, half of the new loans had LTVs between 80% and 90% in the first half of 2021. By contrast, the share of loans provided with LTVs of below 80% decreased from 60% in July 2019 to roughly 50% from the first quarter of 2019 onwards. Nevertheless, the share of new loans provided with both high LTV ratios (above 90%) and stressed DSTI ratios (above 60%) gradually decreased following the introduction of the borrower-based measures (falling from 35% in July 2018 to 3% in December 2020). By the end of 2022, the average maturity of mortgage loan limits should also gradually bring loan terms down to 30 years. Interest rate spreads are relatively low (0.8% in August 2021) and have been decreasing (down from 1.2% in the fourth quarter of 2018). Meanwhile, borrowers in Portugal pay one of the highest annual percentage rates to cover their mortgage loan charges in the EU (apart from the interest payments, these charges also include maintenance costs for the accounts required to conclude the credit agreement and insurance costs required to obtain the loan).

Household indebtedness was trending downwards until recently but has started to rise again, driven by the mortgage credit. Household sectors deleveraged following the last financial crisis. In terms of GDP, indebtedness decreased from 88% in mid-2008 to 64% in the first quarter of 2020, while in terms of disposable income the decline was from 128% to 92% over the same period. Nevertheless, in 2020 the stock of credit to households started picking up again, reaching 69% in terms of GDP and 93.6% in terms of household disposable income in the first quarter of 2021. A source of risk related to household credit is that variable rate loans make up a high share of both the loan stock and of newly provided loans (about 70% of new loans on average over 12 months in August 2021). In July 2021, 13% of housing loans were still subject to a COVID-19-related moratorium. However, the moratorium has expired in the meantime and the Banco de Portugal estimates that a significant share of households benefited from the moratorium, making use of it for precautionary reasons.

Mortgage loans in Portugal make up one of the highest shares of banks' loan portfolios among the EU countries. In the first quarter of 2021, the stock of mortgage loans represented 38% of bank loans in Portugal. Against this background, risk weights for RRE exposures of institutions that use the IRB approach to calculate capital requirements were relatively low in the first quarter of 2021 (13.9%), having declined significantly over the last three years (from 19.5%). Banks following the IRB approach had a share of about 45% of the stock of mortgage loans in Portugal, which is low in comparison with other European countries. To some extent, this might

¹⁰² Banco de Portugal (2021), **Financial Stability Report**, June.



also reflect the improvement in borrower risk profiles since the implementation of borrower-based measures.¹⁰³ A factor that to some extent mitigates the tail risks related to a potential decline in RRE prices is the LTV distribution of Portuguese banks' mortgage loan portfolios.

Policy mix

- LTV: limit of 80% (90% for primary residence) with no exceptions.
- DSTI: limit of 50% applied on the basis of stressed values (taking into account the overall debt).
- Average maturity limit for mortgage loans: converging towards 30 years in 2022.
- Maturity limit for unsecured consumer loans: seven years (tightened from ten years in January 2020. The proportion of exceptions made in order to grant credit to borrowers with a DSTI ratio of between 50% and 60% has been reduced from 20% to 10%).¹⁰⁴

Policy assessment

The current policy mix is considered to be appropriate and sufficient. The set of borrower-based measures is appropriate given the risks identified. The DSTI limit is defined on the basis of stressed DSTI values, which provides protection against an increase in interest rates given the prevalence of variable rate mortgage loans. LTV limits apply to the values calculated using the minimum of the appraisal and purchasing prices, something that prevents credit providers from circumventing the limits by adjusting their valuation practices. DSTI limits apply to the overall debt service burden, while maximum maturity is defined for both mortgage and consumer loans in order to avoid circumvention by concurrently providing unsecured credit. Even though the measures are in place as recommendations, evidence from the Banco de Portugal suggests that institutions have been complying with the rules so far.

Unless the economic scenario turns out to be less benign than expected, and if vulnerabilities keep increasing, Portugal could consider tightening macroprudential policy further in the medium term while aiming to avoid procyclical effects. However, a cost-benefit analysis suggests that borrower-based measures may not be the most efficient way to do so. First, the measures may not be fully effective, as a substantial part of housing transactions are carried out without domestic credit. Second, they could bring additional unwarranted costs to the borrowers who face overvalued house prices, partially as a result of foreign demand characterised by higher purchasing power. Instead, if vulnerabilities continue increasing, Portugal could consider introducing a sectoral SyRB and/or measures to increase risk weights for RRE exposures of

¹⁰³ Neugebauer et al. (2021) find that the borrower-based measures implemented in Portugal lead to (i) a reduction in households' loss rate (by 0.05 percentage points), caused by a decrease in households' probability of default and in their loss given default and (ii) an increase in the capital ratio of the banking system (by 0.63 percentage points) compared with a scenario where these limits are not in place. See Neugebauer, K., Oliveira, V. and Ramos, A. (2021), "Assessing the effectiveness of the Portuguese borrower-based measure in the Covid-19 context", Working Papers 2021, No 10, Banco de Portugal, Economics and Research Department.

¹⁰⁴ The maturity limit for unsecured car and personal loans is still ten years.



institutions that use the IRB approach to calculate capital requirements when the economic recovery is seen to be on a solid footing and taking into account potential procyclical effects.

3.4.12 Slovakia

Summary

Cyclical position of the housing market: Firm/mature expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Partially sufficient
Key vulnerabilities: Signs of house price overvaluation, high house price growth, increasing household indebtedness, high (mortgage) credit growth	

Description of vulnerabilities

Real house price growth in Slovakia is the second highest in the EU, and price dynamics have accelerated during the pandemic. House prices in real terms have continuously increased in Slovakia during the last five years. The pace of growth has accelerated since the beginning of 2019 despite the tightening of the legally binding LTV limit, which was revised downwards from 90% to 80% at the end of the second quarter of 2018 (with the possibility of an exception being made in the case of the 20% of new loans that can be granted with an LTV up to 90%). Collateral prices have grown faster than household income, reducing housing affordability over time. However, housing affordability has been increasing in lower and middle-income households, which have exhibited the fastest growth in income. Price dynamics have been sustained by an economy in an expansionary phase, a low level of interest rates and strong household demand for new apartments against a shortage of supply. In the fourth quarter of 2020, during the COVID-19 crisis, the year-on-year real increase in house prices reached 14.2%, the second highest level in the EU. However, during the pandemic, rental prices have slowly decelerated due to mobility restrictions that have reduced the influx of students and tourists into the big cities (Bratislava in particular). Houses and apartments available for rent may be put up for sale in the future if inflows of people do not return to pre-pandemic levels, but structural interventions to increase the supply of dwellings could contribute to slowing the accelerating upward trend in prices. According to overvaluation metrics, using both the inverted demand model and the price-to-income ratio approach, house prices were overvalued by slightly more than 10% in the fourth quarter of 2020.

Mortgage credit growth in Slovakia has been among the highest in the EU over the last three years, despite policy interventions. An increasing share of loan maturity beyond retirement age might be monitored to limit repayment issues. Strong growth in lending to the private sector in Slovakia, which includes lending both to non-financial corporations and households, has been among the main drivers of economic expansion in recent years. The Slovakian lending environment is characterised by a low level of interest rates, one of the lowest costs of borrowing in the EU, strong demand for mortgages amplified by rising house price levels, and intense competition



among banks over lending. Currently, the Slovakian banking sector is one of the most exposed to real estate activities across the EEA countries, with an exposure to mortgage loans as a percentage of total equity of 468.23% at the end of the first quarter of 2021. In the middle of the economic crisis, the reduction of capital buffer requirements and fiscal measures introduced by the Slovakian government have contributed towards sustaining banks' lending to the real economy. Mortgage lending growth has indeed continued to accelerate during the COVID-19 shock: in 2020, the average real growth rate increased to 7.5% (compared with 7.3% in 2019). Thanks to the amendment introduced in the Housing Loan Decree and Consumer Loan Decree, Národná banka Slovenska tightened DSTI limits in January 2020 with a phase-in related to a range of exceptions. In the first half of 2021, banks did not make full use of these exceptions, which indicates that a certain degree of caution was exercised within the sector. However, there has recently been an increase in the share of loans exceeding retirement age in terms of loan maturity. This phenomenon seems to be connected mostly with refinancing operations which are often associated with a top-up of the original loan amount. This dynamic needs to be closely monitored to avoid a build-up of loan repayment issues.

Household indebtedness in Slovakia has risen over the last few years owing to intense lending activity in the funding stretch. After years of double-digit increases in the stock of real household debt, the pace of growth in indebtedness has decelerated, stabilising at 6% and 4% in 2019 and 2020 respectively. Despite the deceleration, which is partly attributable to macroprudential policy interventions (DTI introduction and DSTI tightening), growth in household indebtedness is still among the highest in the EU and has translated into a rising debt-to-GDP ratio, which stood at 47.5% in the fourth quarter of 2020 (the highest historical value). Households are increasing their debt in order to make house purchases. While consumption declined during the pandemic, demand for funding to acquire new houses persisted during the crisis. Based on the situation in August 2021, Národná banka Slovenska estimates that only 0.4% of indebted households may experience problems with their debt service activity (including those that applied for relief under moratoria). In all, 7.1% of the loans previously under moratoria were already seen to be troubled, and the households most likely to have applied for relief, as well as households that had some difficulties after expiration of moratoria, were those whose debt service capacity, measured by DSTI, DTI and LTV limits, exceeded regulatory limits within the permitted range of exceptions before the crisis.

Policy mix

- LTV: 80% value of collateral, 20% range of exceptions (up to an LTV of 90%). Share of new loans with an LTV above 80% cannot exceed 20%.
- DTI: 8 times yearly net disposable income. 5% range of exceptions. Introduced in 2018.
- DSTI: 60% of borrowers' disposable income. 5% range of exceptions (up to a DSTI of 70%). The DSTI limit has been tightened from the previous level of 80% with effect from 1 January 2020.
- Amortisation requirement: all loans must be amortised at least by annuity repayment.



- Maturity limit: 30 years for loans secured by immovable property (10% range of exceptions – barely used); eight years for other loans.
- Stress test: 2% interest rate increase.
- CCyB: in May 2020, during the pandemic, the CCyB was lowered from 1.5% to 1.0%, and a further increase to 2% was announced.
- SyRB: 1%. This measure will expire in December 2021 and will be replaced by O-SII buffer rates.

Policy assessment

The current measures are deemed to be appropriate and partially sufficient. There is a comprehensive set of borrower-based measures in place, which is appropriate to address the underlying risks. The CCyB of 1% (with a further increase to 2.0% announced) and the SyRB should ensure a certain amount of resilience against a potential materialisation of risks that may have accumulated in the past.

Some pockets of vulnerability relating to residential real estate continue to build up. Národná banka Slovenska might consider fine-tuning the existing borrower-based measures framework to tackle these pockets of vulnerability, particularly those related to the topping-up of existing mortgages and the signs of loan maturities being extended beyond retirement age. Alternatively, the national authority might consider rebuilding the CCyB or introducing a sectoral SyRB to potentially reduce mortgage lending without curbing lending to other sectors of the real economy. Another possibility¹⁰⁵ would be to activate Article 458 for IRB banks' RRE exposures, which could increase the resilience of the banking sector through higher risk weights for the IRB RRE exposures. These risk weights have been relatively low by international comparison (13.9% at the end of first quarter 2021), so the measures could represent a more targeted option compared with the other alternatives in the event that vulnerabilities increase further. At the same time, the national authorities should address other policies which might have contributed to the build-up of RRE vulnerabilities in Slovakia. This may help the authorities to take complementary steps – alongside the macroprudential measures – to address these vulnerabilities efficiently. Specifically, tax incentives for taking mortgage debt should be eliminated, and the rental market should be reformed to ensure its flexibility and alleviate the pressure on the market.

¹⁰⁵ A similar solution has also been discussed by the International Monetary Fund (IMF) in a recent publication, "[Slovakia Republic: 2021 Article IV Consultation](#)".



3.4.13 Slovenia

Summary

Cyclical position of the housing market: Firm expansion	Policy appropriateness: Appropriate
Risk assessment: Medium risk	Policy sufficiency: Sufficient
Key vulnerabilities: Elevated house price growth, elevated housing lending growth, improving but still relatively loose lending standards	

Description of vulnerabilities

House prices have continued to grow robustly, albeit at a slower pace than before the pandemic. In the three years prior to the outbreak of the pandemic, residential real estate prices were growing by 6% to 8% annually in real terms, particularly outside the two biggest cities. Since the end of 2019 price growth has decelerated slightly, with annual real growth rates ranging from 3.0% to 7.9% between the first quarters of 2020 and 2021. After having been negative for several months from the start of the pandemic, rental price growth rates have turned positive again since July 2021. Overall, the ECB's models give no clear signals of overvaluation. While some indicators, such as the deviation of the price-to-rent ratio from its historical average, do suggest overvaluation, others point to prices being in line with fundamentals. Similarly, internal models available at Banka Slovenije suggest that prices are in line with fundamentals or only slightly overvalued. Recent dynamics on the supply side are expected to alleviate price pressures: notwithstanding the pandemic, there was a significant rise in the number of building permits issued for residential and non-residential buildings in the second half of 2020. Furthermore, in the last couple of years the Housing Fund of the Republic of Slovenia significantly picked up its activity, which is expected to lead to an increase in the supply of houses available both for purchase and for rental purposes.

The stock of housing loans granted to households has kept increasing at an elevated pace, notwithstanding tighter lending standards applied by banks. While consumer loan growth has slowed since the introduction of binding macroprudential restrictions on household lending in November 2019, with yearly rates even reaching negative values after the outbreak of the pandemic, year-on-year growth in housing loans has increased slightly and stood at 5.5% in August 2021. The growth in the stock of housing loans is the result of both the robust production of new loans and, to a lesser extent, deferred payment related to the use of moratoria, which stood at 5.3% of outstanding loans at the end of December 2020. According to the ECB's bank lending survey, the robust demand for housing loans has recently been driven by the general level of interest rates, positive housing market prospects and improved consumer confidence, particularly after the second quarter of 2020. According to the same survey, banks have tightened their lending standards overall since the third quarter of 2019. This is confirmed by granular data on lending standards collected by Banka Slovenije, which show that the share of new housing loans with a DSTI higher than the legally binding limit of 50% declined from 11% in 2018 to 5% in 2020. Similarly, the share of new housing loans with an LTV ratio higher than the recommended 80% limit decreased from 25% to 16%. The banking system's non-performing housing loans rate remained



stable at around 1.7% in 2020. However, the stock of housing loans in stage 2 increased by 2 percentage points year-on-year, standing at 10% at the end of December 2020, thus signalling increased credit risk. The exposure to the construction and real estate activities sectors is relatively low (around 5% of total loans as of the end of 2020, down from the 18% peak reached in 2011), while mortgage loans made up 16% of total banking system loans as of the end of 2020, which is below the EEA aggregate.

The household sector has proved resilient so far to the COVID-19 shock, aided by the support from policy measures. Despite the COVID-19 pandemic, disposable income of the aggregate household sector grew nominally by 9.8% in the fourth quarter of 2020 and by 3.8% in 2020 as a whole year-on-year. In addition, the number of personal bankruptcies in 2020 declined. Household indebtedness has remained stable and is assessed as moderate by international comparison: as of the first quarter of 2021, it stood at 28.1% and 43.1% of GDP and disposable income respectively. Nevertheless, the impact of the pandemic on more indebted lower-income households and households where family members are employed in the hardest-hit sectors of the economy will be revealed only after the support measures expire. This is the main source of vulnerability related to the household stretch, as more than half of new consumer loans were being approved for households with below-average earnings before the binding macroeconomic measure for household lending was adopted.

Policy mix

- LTV: recommended limit of 80%.
- DSTI: limits set to 50% for net monthly income of no more than twice the minimum gross wage, and 67% for the portion of the net monthly income that exceeds twice the minimum gross wage (10% of the value of new consumer loans can be granted above the limits).
- Maturity limits: for consumer loans, these are set to seven years (15% of the value of new consumer loans can be granted above the limits).

Assessment

The current measures are deemed to be appropriate and sufficient to address the underlying risks. The current macroprudential restrictions on household lending are comprehensive, as they provide for DSTI and LTV limits. While maturity limits apply to consumer loans only, lending data collected from Banka Slovenije show that the share of loans with a maturity above 30 years is negligible. The current policy mix is also assessed as being fully sufficient: after the introduction of borrower-based instruments, the lending standards on new housing loans have significantly improved. However, the national authorities would need to continue monitoring the developments in the lending standards and consider the introduction of legally binding LTV limits if the recommended limits were not carefully followed. In addition, while private sector indebtedness is assessed as being low by international comparison, if there were to be an excessive pick-up in credit as the recovery unfolds and if house price growth were to increase, the authorities might consider introducing a sectoral SyRB.



4 Concluding remarks

In this report, the ESRB presents its medium-term assessment of vulnerabilities relating to the RRE sector across the EEA countries. In carrying out this assessment, the ESRB first performed an analysis of vulnerabilities across the EEA countries. For the 24 countries for which the vulnerabilities identified were more pronounced, an in-depth analysis was conducted. This analysis pointed also to the need to take into account or change other than macroprudential policies, for example by changing tax incentives or increasing the housing supply. A similar assessment was conducted by the ESRB in 2019, when 11 countries received either ESRB recommendations (Belgium, Denmark, Finland, Luxembourg, Netherlands and Sweden) or warnings (Czech Republic, Germany, France, Iceland and Norway).

The risk assessment concluded that, in five countries which received ESRB recommendations or warnings in 2019 (Denmark, Luxembourg, Netherlands, Norway and Sweden) the vulnerabilities relating to residential real estate markets remained high, while in six countries (Belgium, Czech Republic, Germany, Finland, France and Iceland) the vulnerabilities were assessed as medium. Among other EEA countries, 13 (Austria, Bulgaria, Estonia, Croatia, Hungary, Ireland, Liechtenstein, Lithuania, Malta, Poland, Portugal, Slovenia and Slovakia) were identified as facing medium risks.

The policy assessment found that in five countries which received ESRB recommendations or warnings in 2019 (Belgium, Czech Republic, France, Iceland and Norway), policies were assessed as appropriate and sufficient to mitigate the vulnerabilities identified. In two countries (the Netherlands and Sweden), policies were assessed as being appropriate but partially sufficient, while in four of the countries (Germany, Denmark, Finland and Luxembourg), policies were assessed as partially appropriate and partially sufficient. Among the rest of the EEA countries analysed in this report, in one country (Slovakia) policies were identified as appropriate and partially sufficient, while in five countries (Austria, Bulgaria, Hungary, Croatia and Liechtenstein) policies were found to be partially appropriate and partially sufficient.

In countries in which the policies were assessed as only partially sufficient to mitigate the identified vulnerabilities, the ESRB suggested various macroprudential measures to be considered by the national authorities. In particular, the ESRB pointed out that a number of countries should either introduce additional borrower-based measures or tighten existing ones to mitigate the existing vulnerabilities more effectively or prevent a further build-up of vulnerabilities. Countries with accumulated vulnerabilities should also ensure that capital is preserved until a possible materialisation of risks or consider (re)introducing capital-based measures once the economic recovery is on a firm footing. However, taking into account the economic uncertainty related to the pandemic, any policy actions should be carefully assessed to ensure that they contribute towards mitigating RRE vulnerabilities, while aiming to avoid procyclical effects on the real economy and the financial system. In the near term, it is particularly important for all countries that banks make adequate provision for expected losses. Finally, the analysis notes that, in some countries in which the systemic risk levels identified remain high, interventions in other policy areas may be required to complement macroprudential policy.



Annex on methodology

The analysis in this report draws on the ESRB methodology for the assessment of real estate vulnerabilities, which was developed by the ESRB Working Group on Real Estate Methodologies and published in the ESRB report entitled “Methodologies for the assessment of real estate vulnerabilities and macroprudential policies”. The same methodology was used for the assessment of RRE risks and macroprudential policies in 2019, on the basis of which the ESRB issued recommendations to the six countries referred to above.

The original methodology was operationalised for the purposes of the 2019 assessment. The methodology consists of a risk assessment, an assessment of policy appropriateness and an assessment of policy sufficiency. Another inherent part of the methodology is the analysis of the cyclical position of RRE markets. This provides further information for assessing risk indicators and the timing of materialisation of vulnerabilities, which is also important for the assessment of policies.

Risk assessment

The risk assessment is centred around three risk dimensions called “stretches”: the collateral stretch, which focuses on house price developments and potential price misalignments; the funding stretch, which covers developments in lending; and the household stretch, which focuses on fragilities in households’ balance sheets.

The risk assessment starts with a mechanical evaluation of a scoreboard of key risk indicators, which are compared against critical thresholds. Based on the thresholds, each indicator is assigned a rating from 0 to 3. The average rating of indicators in each stretch and the average rating across all indicators are then assigned one of the following risk levels: “limited”, “low”, “medium”, or “high”.

Next, the mechanical evaluation of risk levels is adjusted for other relevant information on the basis of expert judgement. The additional information includes a set of country-specific indicators that convey information on a range of cyclical, structural and institutional drivers of the domestic RRE market. Both the “medium” and “high” categories highlight the existence of vulnerabilities that may need to be addressed by macroprudential policies. To identify the need for macroprudential action, interaction between the stretches must be assessed, as well as the systemic importance of RRE in a country.

Macroprudential policy assessment

The assessment of macroprudential policies is conditional on the level of the systemic risk identified and consists of the following two pillars: the appropriateness of the activated measures, in terms of the selection of instruments and their timing; and the sufficiency of the activated measures, in terms of calibration and effectiveness with respect to the policy objectives.

Assessment of policy appropriateness

Macroprudential policy appropriateness is evaluated depending on the nature and level of the vulnerabilities identified as well as the position of the country in the real estate cycle. The presence of accumulated vulnerabilities or a positioning in the mature phase of the real estate cycle



expansion may indicate the need for capital-based instruments. By contrast, if vulnerabilities have only started building up for recent exposures, borrower-based measures are typically considered more appropriate. However, there is a fine line between the two policy options for countries which exhibit a combination of several vulnerabilities, so the appropriate policy mix should not be designed mechanically. In addition, a comprehensive macroprudential response is generally more effective in addressing systemic risks and in limiting both leakages and the circumvention of the measures.

When assessing the use of borrower-based measures, the enforceability of the measures in relation to the intensity of vulnerabilities over the medium-term is also taken into account. In countries where flow vulnerabilities are considered to be significant, a high degree of enforceability of the borrower-based measures would be required in order for the policy to be assessed as fully appropriate. By contrast, for countries with less pronounced flow vulnerabilities, “softer” measures, such as recommendations by national authorities, might still be considered fully appropriate. In the case of non-legally binding borrower-based measures, the institutional frameworks behind these measures were analysed in order to assess the enforceability of these measures.

The final outcome is one of the following ratings of policy appropriateness: “fully appropriate”, “partially appropriate” or “not appropriate”.

Assessment of policy sufficiency

The assessment of policy sufficiency is dependent on the outcome of the evaluation of policy appropriateness. It is also based on the ability of macroprudential measures to deliver a substantial contribution towards mitigating the vulnerabilities identified, with reasonably higher benefits than costs in pursuing the stated policy objectives. The assessment of policy sufficiency is particularly challenging given the heterogeneity of methods used by national authorities to calibrate and evaluate the measures, as well as the scarcity of advanced tools to assess policy sufficiency. For this reason, the analysis reflects the current best practices, either observed empirically across countries or reflected in the economic literature, countries’ own assessments of policy effectiveness, and practical evaluations of risk indicators based on the implementation of policies. Following such an assessment, policy is considered partially or not sufficient if vulnerabilities are still increasing to a certain degree.

In addition, macroprudential policy may not be fully sufficient because the net benefit of further action may mean that it is not recommended as a “first best option” for mitigating systemic risk, and other policy areas may need to intervene. In cases where the expected benefits of macroprudential policy relative to costs seem to have been achieved, other policy areas might be needed to mitigate these risks efficiently and effectively. It is important to note that macroprudential policy has its limits in containing systemic risks that come from areas beyond the financial sector, e.g. through households’ incentives or limited housing supply. In such cases, other policies are needed to complement macroprudential policies in order to mitigate the sources of systemic risk efficiently.



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