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# Housing Market Developments in the Euro Area: Focus on Housing Affordability

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# Housing Market Developments in the Euro Area

## Focus on Housing Affordability

Christine Frayne, Agnieszka Szczypińska, Bořek Vašíček and Stefan Zeugner

### Abstract

House prices have been at the centre of the public debate recently. After years of sustained increases they accelerated further during the pandemic. The global financial crisis highlighted the impact that housing markets can have on financial stability and the real economy. However, housing market developments also affect housing affordability, which has been deteriorating as income growth did not keep pace with house prices. This paper looks at housing developments in the euro area countries from an affordability perspective, and shows its various dimensions, such as price-to-income, burden of housing cost, household borrowing capacity, but also regional patterns and the impact of affordability on broader economic developments. The paper discusses policy options for addressing high and increasing house prices and the impact these measures have on affordability. The paper documents how housing has evolved across time and countries. The main policy conclusion is that affordability requires policies supporting housing supply. While there is a full set of policies that can boost supply of housing, effectively introducing these policies is challenging as they are usually under the control of different actors, often implemented to address other issues and take long to make an impact. In contrast, demand-side policies can be introduced quickly and provide assistance to vulnerable groups. The excess of housing demand over supply gives rise to economic rents for property and land owners, which makes finding a balanced solution more challenging.

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**Keywords:** house prices, housing affordability, borrowing capacity, regional housing markets.

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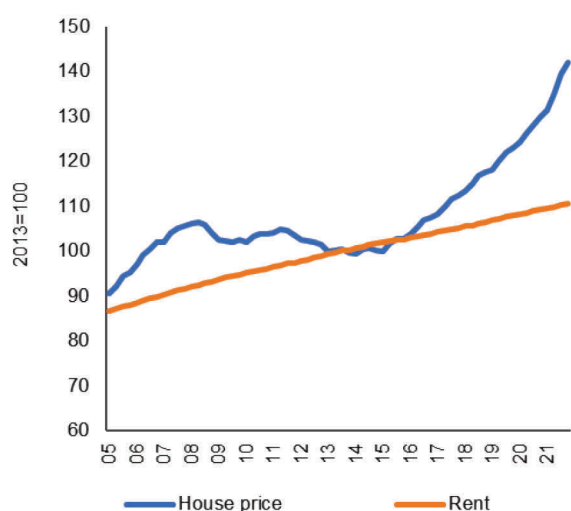
GRAPHS 1-25  
ANNEX I



# 1. HOUSE PRICE DEVELOPMENTS SINCE THE GLOBAL FINANCIAL CRISIS

**A strong correction in booming housing markets was at the centre of the economic impact of the previous financial crisis in several euro area countries.** The financial crisis of a decade ago was accompanied by a sharp decrease in house prices in countries such as Ireland, Greece and Spain, as the boom that had been building up for years came to an end (Graphs 1 and 2). After peaking around 2007–08, house prices started to fall in nearly all euro area countries, reaching a trough in 2013–14. A number of countries with strong construction booms experienced a sudden stop in construction activity, accentuating the impact of the crisis on the real economy. The strong credit growth that had fuelled house prices resulted in a very high leverage of households with an increasing share of them unable to meet their mortgage obligations. This contributed to an increase in non-performing loans, which are still in the process of being cleared in some countries. However, in some other countries the correction was relatively minor, as was the pre-crisis increase, such as in Austria, Germany, or Belgium. In this group of countries, the post-crisis correction could be linked to muted domestic demand conditions rather than correction of imbalances in the housing market. In the same period, rents in the euro area reported a steady but shallower growth.

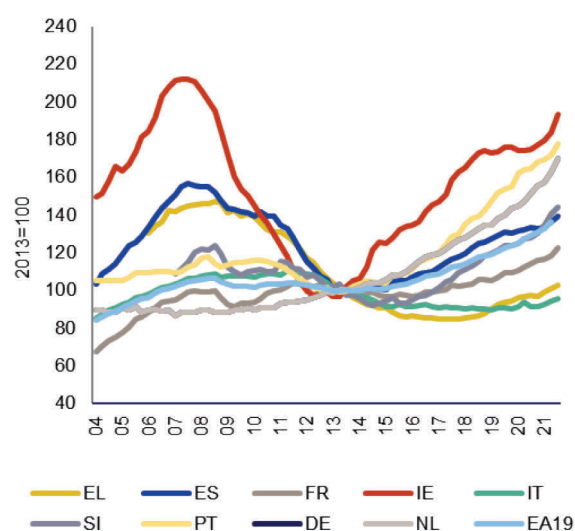
Graph 1: House prices and rents in EA-19, 2005-2021



Note: The house price index (HPI) for EA-19 is calculated as a weighted average of the national HPIs, currently using as weights the GDP at market prices (based on PPS) of the countries concerned. 2013=100.

Source: Eurostat.

Graph 2: House prices, selected EA countries, 2004-2021



Note: 2013=100.

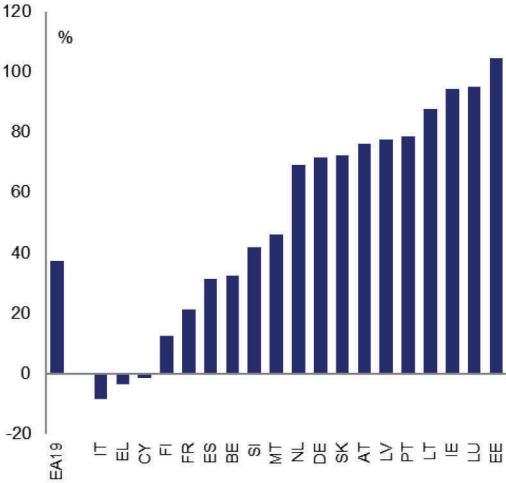
Source: Eurostat.

**Since the trough in 2013, house prices have been increasing steadily across the euro area.** With the resumption in economic growth, house price growth turned positive in nearly all countries. At euro area level, house price growth gradually built up to attain a cumulative increase of some 40% between 2012Q4 and 2021Q3 (Graph 3), which is around four times higher than the increase in the overall price level (HICP). Within this total, there has been variation across countries, with some of those most affected by the global financial crisis showing more modest growth, while other countries attained cumulative growth approaching 100%. The Baltics, Luxembourg, Ireland and Portugal posted cumulative growth of more than 70%. In Germany, prices in 2021Q3 were some 70% above their end-

2012 values, in contrast to 30% in Spain, and 20% in France. Conversely, prices decreased in Italy (-7%), and remained broadly stable in Greece and Cyprus over this 10-year period.

**The pandemic coincided with an acceleration of house prices.** House price growth surged during the pandemic. Out of the total increase in prices that occurred since 2013 (40% for the EA – Graph 3), around half has taken place in the last three years, with 2021 being particularly buoyant (Graph 4). The annual house price growth in 2021Q3 has been the highest since 2013, coming in at 10% overall for the euro area. This acceleration represents a doubling of the average house price growth rate in the euro area overall and is a marked departure from the previous steady and sustained increase. Cumulatively, house price growth has exceeded 20% in Slovenia and Germany from 2018Q3 to 2021Q3, surpassed 30% in Latvia, Portugal, Austria, Slovakia, Estonia, the Netherlands and Lithuania and 40% in Luxembourg (Graph 4).

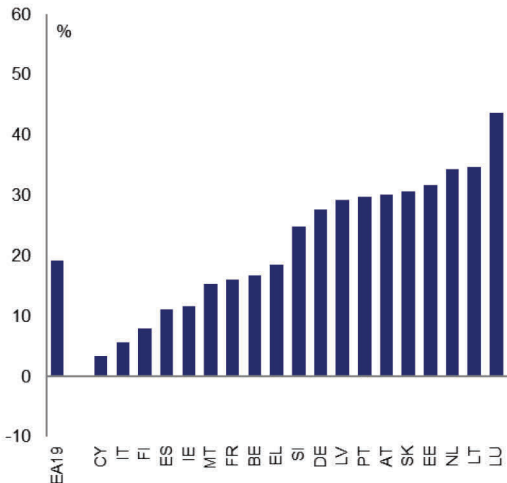
Graph 3: House prices, cumulative changes 2012Q4 to 2021Q3



Note: The house price index (HPI) for EA-19 is calculated as a weighted average of the national HPis, currently using as weights the GDP at market prices (based on PPS) of the countries concerned. 2013=100.

Source: Eurostat.

Graph 4: House prices, last 3 year change, 2018Q3 to 2021Q3



Note: The house price index (HPI) for EA-19 is calculated as a weighted average of the national HPis, currently using as weights the GDP at market prices (based on PPS) of the countries concerned. 2013=100.

Source: Eurostat.

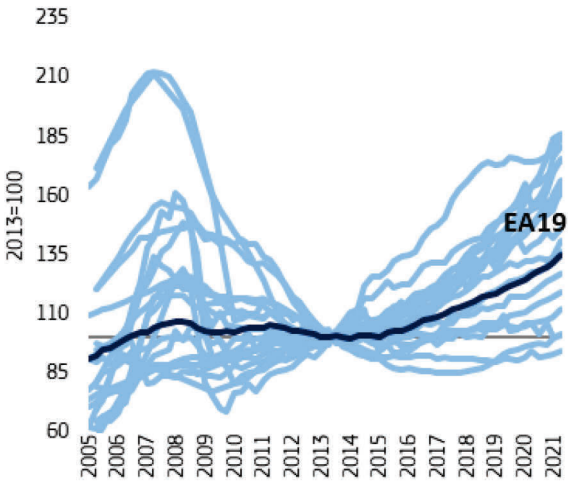
**As a result of these years of increase, house prices in the euro area are now higher than at the outbreak of the global financial crisis in 2008.** House prices in the euro area are overall some 40% higher than their 2013 post-crisis levels, and 30% higher than at their peak in 2008 (Graphs 1 and 5). Across countries, however, the dispersion is considerable. Among the euro area countries, in the cases of Cyprus, Greece, Ireland, Italy and Spain house prices are below their 2008 level; in the remaining euro area countries they are above the 2008 mark, with Austria, Germany, and Luxembourg posting a level that is double that of 2008. Graph 5 also shows that the current trajectory of house prices is similar to the one noted in the years that led to the correction in 2008; as will be discussed later, this does not itself indicate that what is underway at present is a boom that displays equivalent dynamics and risks to the situation prior to the financial crisis.

**The methodology used by the Commission indicates that house prices are now overvalued in over half of the euro area countries.** In line with other economic forecasters and institutions, the Commission compares house prices with some fundamental economic drivers in order to gauge whether they are at a plausible level using a structural model. These fundamental drivers include population, income, interest rates and a proxy for the housing stock, all of which are found to affect house prices in the EU (Philipponnet and Turrini, 2017), but the estimated valuation gap is subject to



significant uncertainty.<sup>1</sup> In addition, deviations of the price-to-income and price-to-rent ratios from their long-term averages are calculated. In order to obtain a more balanced assessment, the Commission considers the results of each of these three methods as well as their average value (Graph 6). This combined reading suggests that house prices are currently overvalued in over half of the euro area countries. Moreover, looking at how this estimate of overvaluation has changed over the years, there has been a marked increase in the number of euro area countries displaying overvaluations.<sup>2</sup>

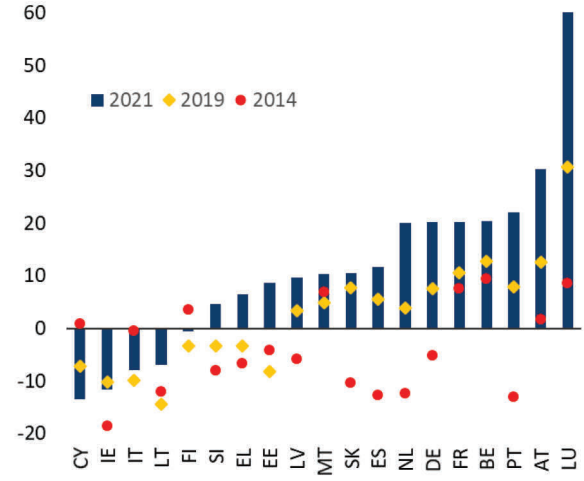
Graph 5: House price index, EA-19



Note: The house price index (HPI) for EA19 is calculated as a weighted average of the national HPIs, currently using as weights the GDP at market prices (based on PPS) of the countries concerned. 2013=100.

Source: Eurostat.

Graph 6: Average house price valuation gaps (% difference to estimated benchmark)



Note: Positive (negative) value denotes an overvaluation (undervaluation). Note that figures for IE are influenced by a very dynamic income growth and a history of high house prices.

Source: Eurostat, own calculations.

**Increased house prices have an important impact on housing affordability and wealth distribution across households.** House price increases and overvaluation amplify the financial stability risk but also worsen the median households’ ability to purchase a property (housing affordability) given that income growth is unable to match dynamic house prices. Booming house prices also represent a windfall gain to home owners, at the expense of renters and younger generations forming new households. Worsening housing affordability and distributional effects have both economic and social implications in terms of reduced labour mobility towards high-skilled jobs, as they are usually located in metropolitan areas where housing affordability is most challenging.

**The extent to which the present situation affects social and economic outcomes will be significantly different across euro area countries.** There are important differences in housing markets across countries that go beyond the level and growth of house prices and associated pressures on housing affordability. First, the home ownership rate varies significantly (from 50% in Austria and

<sup>1</sup> An “equilibrium level” of house prices is estimated based on the long-term relationship of these estimators and house prices parameters, and the actual level is compared to it. The presence of country-specific controls such as country fixed effects implies that estimates of the appropriate level of house prices are determined by their value over time. In countries that experienced strong housing booms – such as Ireland – the appropriate valuation contains an upward bias due to the boom. Therefore, the necessary correction of the boom reduces the estimate of overvaluation of subsequent prices.

<sup>2</sup> The comparison with 2014 also makes it clear that, according to the model, the trough in house prices reached in 2014 reflected an estimated undervaluation in residential prices. Some of the increase in prices since then has hence been a correction from this low level.

Germany to 90% in Lithuania and Slovakia), which may explain why housing cycles are less synchronised than business cycles in the euro area (Rünstler and Vlekke, 2018). Second, rental markets diverge across Member States as well, both in terms of size and regulatory framework (Cuerpo and Pontuch, 2014). Third, the ratio of household mortgage debt to GDP presents a wide dispersion (20% in Latvia and Lithuania to more than 100% in Cyprus and the Netherlands), as does the ratio of financial assets held by households (80% of GDP in Slovakia to 340% of GDP in the Netherlands). Mortgage contracts differ significantly, both in terms of the average loan-to-value ratios (LTV), which range from 50% in Italy to 90% in the Netherlands, and their type, with a predominance of fixed interest rates in some countries (e.g., Germany, France) and variable interest rates in others (e.g., Greece, Spain) and the common mortgages maturity (15-30 years). All these factors may affect the spending strategies of households. These differences only change slowly over time and can be thought of as being persistent structural differences, at least in the short-to-medium term.<sup>3</sup> However, these differences are visible also within the countries so the city/regional perspective would significantly contribute to the analysis of social and economic outcomes (Hoekstra, 2020).

## 2. SUPPLY AND DEMAND: WHAT DRIVES HOUSE PRICES?

### 2.1 LONG-TERM DRIVERS OF HOUSE PRICES

**The current increase in house prices is part of a longer trend stemming from the scarcity of land, which leads to monopolistic gains for its owners.** The current increase in house prices can be seen within a broader growth of house prices across developed countries, which started in the 1950s and has been accompanied by rising land prices, rather than construction costs (Knoll, Schularick and Steger, 2017). Land has particular properties that are economically very different to other forms of capital: it is permanent, it does not depreciate in value over time and its supply is fixed for all intents and purposes (Ryan-Collins et al., 2017). The owners of land essentially enjoy a monopoly over their asset, which enables them to extract economic rent from this asset, unrelated to any additional investment made on it or effort. Economists have been concerned about the inherent tendency of property to increase in real value since the days of Adam Smith and David Ricardo,<sup>4</sup> with the target of concern shifting from agricultural land to housing, as economic production changed (Piketty, 2014). It remains at the heart of many issues relating to high and rising property prices.

**Over the short and medium-term, there are many other factors at play that determine house prices with both demand and supply being affected.** While land is in (more or less) fixed supply, housing is not. The construction of housing – which is determined by many factors including the regulatory environment – leads to increases in supply and the housing stock can respond to increased demand in a manner that land cannot. The lag between increased demand and the response of supply can itself amplify the impact of housing shocks, as the shift in economic activity into construction can lead to oversupply as the market cools. Over the short-term, construction costs can also play a role, both in terms of driving up costs and reducing the incentives for construction companies to embark on

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<sup>3</sup> Wind et al. (2017) define different housing wealth accumulation regimes in the EU, notably i) regulated rental (e.g. Austria, Germany), ii) privatised rental (e.g. Estonia), iii) regulated expansion (e.g. Belgium, France), iv) liberal expansion (e.g. the Netherlands), v) family ownership (e.g. Italy, Portugal), vi) privatised ownership (e.g. Slovenia) and vii) liberal ownership (e.g. Spain). Martins et al. (2021a) perform a cluster analysis based on a dozen of institutional characteristics of the EU housing markets defining five different clusters: i) Germany and Austria, ii) Belgium, France, Luxembourg and the Netherlands, iii) Denmark, Finland and Sweden, iv) Italy, Greece and Portugal, and v) Spain, Ireland and the UK.

<sup>4</sup> In 1817, David Ricardo published *Principles of Political Economy and Taxation*, developing his theory of the law of rent, which built on Adam Smith's concept of rent for land being naturally a monopoly price. For an overview of the history of economic thought on housing, see Linkater (2013).

construction projects by eating into their profit margins. This relates not just to the price of building input materials, but also to regulatory constraints including rules on energy efficiency.

**Over time, the demand for housing is affected by a range of factors including demographics, income and financing conditions.** Changing demographics, including changes in household composition, affect the demand for housing, with population size and regional migration patterns playing an important role. Income affects the resources available to households to pay for housing and is therefore a determinant of demand; evidence from the economic literature suggests that housing has a high elasticity of demand, with increasing incomes resulting in increased demand for housing (Cheshire and Shepard, 1998). The impact that income has on demand may be accentuated by falling prices for other goods and services leading to an increased role of housing expenditure as a share of income (Turner, 2015). The translation of income into housing demand is however strongly affected by financial conditions and these have played an important role in recent years.

**Credit conditions have become an important determinant of house prices, driving both housing and credit cycles, affecting significantly also housing affordability.** Credit conditions determine both the discounted cost of housing for households and the budget constraint they face. The decline in real interest rates since the mid-1990s increased the maximum obtainable loans households could afford (Madsen, 2012). Starting in the 2000s, financial innovations (securitisation of mortgage debt) changed mortgage characteristics in some markets and led to lower initial down payments, which increased household leverage and house prices (Damen, Vastmans and Buyst, 2016). The increasing leverage in the economy as a whole is associated with dampened business cycle volatility, but also with more spectacular crashes (Jordà, Schularick and Taylor, 2017). Increasing house prices can trigger self-reinforcing credit-housing price spirals and there can be pronounced feedback loops between housing prices and credit growth (Anundsen and Jansen, 2013).

## 2.2 DRIVERS OF HOUSE PRICE INCREASES OVER THE LAST DECADE

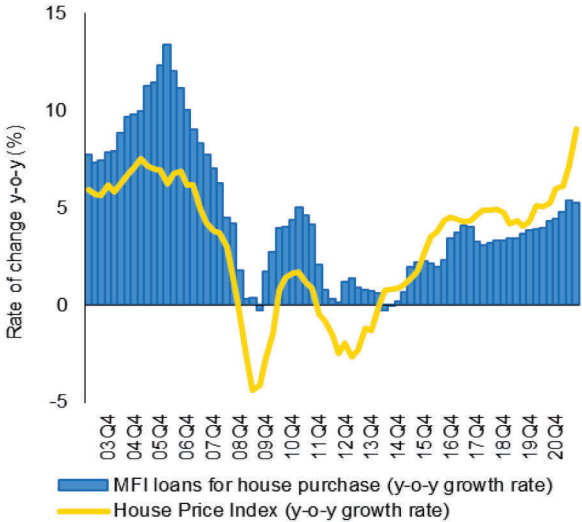
**The relationship between credit and house prices has been different in recent years, compared with the situation prior to the financial crisis, with mortgage lending playing a more muted role.** The boom in house prices prior to the global financial crisis had been fuelled by sharp increases in mortgage lending (Graph 7). This rapid credit expansion had enabled substantial residential over-investment. This was particularly the case for some euro area countries such as Spain and Ireland, which accounted for the bulk of household mortgage credit in the 2000s and where sharp corrections in the housing markets spilled over to the real economy. In contrast, over the recent years, credit growth has remained moderate and residential investment has fallen short of demand.

**The increase in house prices has outpaced the increase in mortgage loans since 2013, although there has been an acceleration in recent quarters.** In parallel, household indebtedness has fallen overall, although with considerable variation across euro area countries (Graph 8). Typically, countries with high starting levels of household debt have reduced this over the years, while those with lower starting levels have increased gradually and are in many cases currently at their peak – albeit at much lower levels than their peers. The application of macroprudential tools has arguably constrained the amount of credit households can access (see section 7.1). However, in 2021 an acceleration of mortgage credit (Graph 9) growth has accompanied the increase in house prices in the euro area and has been mainly driven by Germany and France. While it is still lagging the price increase, a marked jump is visible in the level of ‘pure’ new loans for house purchases. This increases concerns about the interaction between house prices and the financial sector in the euro area.

**While macroprudential limits have reduced access to growing mortgages since the financial crisis, monetary conditions have themselves been favourable to increased house price growth.** Interest rates have been particularly accommodative in recent years (Graph 10). Easy monetary policy and very low interest rates drive house prices up along three major avenues. First, they increase the attractiveness of housing as an investment asset with households (and other economic actors) focusing on real estate for lack of comparable yield in financial investment alternatives. Second, the decline in

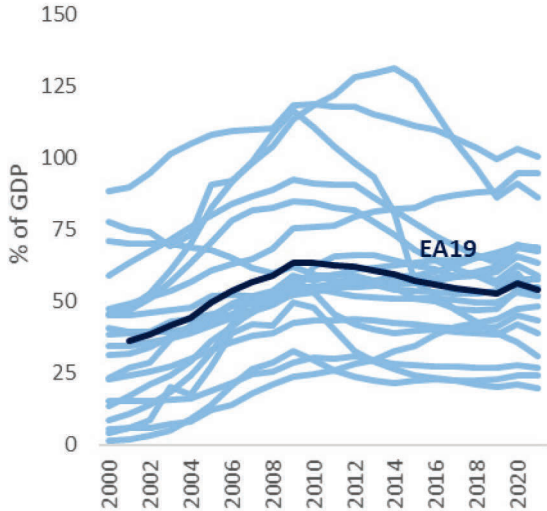
mortgage rates implies a strong increase in the net present value of rents and housing consumption. Third, they reduce the supply of housing as low-for-long mortgage rates do not induce the need to valorise superfluous dwellings by selling or renting them out. Traditional house price models point to interest rates as the most ‘fundamental’ factor behind the pandemic house price acceleration.

Graph 7: House price and mortgage growth rates in the euro area



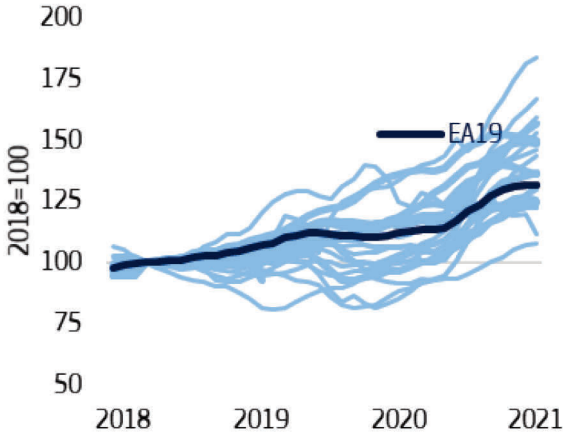
Source: Eurostat, ECB.

Graph 8: Household debt, EA-19



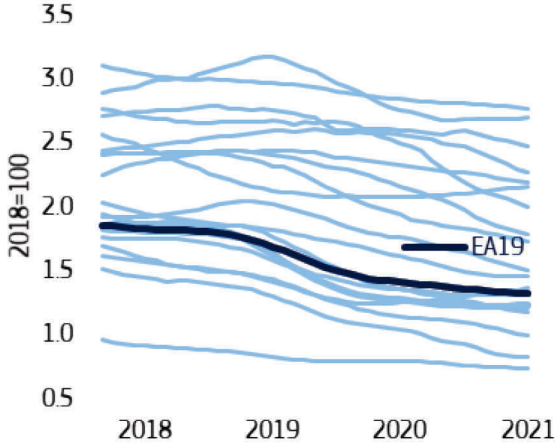
Note: EA19 is the simple average across 19 Members.  
Source: Eurostat, own calculations.

Graph 9: Pure new loans for house purchase, EA-19



Source: ECB.

Graph 10: Interest rate, pure new loans, EA-19 (12-month moving average)



Source: ECB.

**The muted supply of housing appears to be an important factor in the recent decade and played a particular role in the pandemic.** In recent years, strong demand pressures met a very muted response of housing supply. Construction levelled down markedly as evidenced by building permits that declined significantly after the global financial crisis and have not recovered since then (Graph 11). While the pre-crisis levels of construction activity had been induced by housing market bubbles in some Member States, the structurally low housing supply of the last decade represents a marked reduction in construction compared with recent decades and has a negative impact on

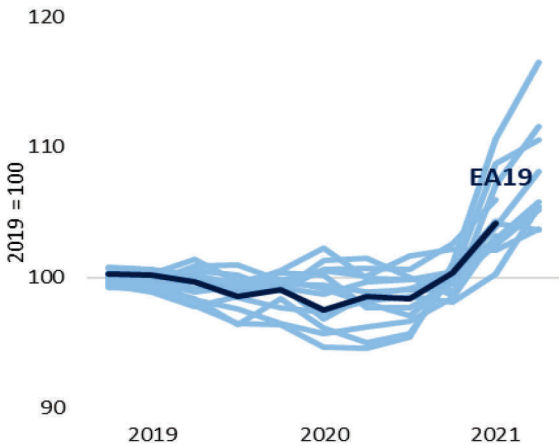
affordability. The deleveraging trend across sectors was not conducive to investment, including investment in real estate. The lockdowns of the immediate pandemic months in early to mid-2020 produced a sudden abrupt decrease in permits issued with a follow-on impact on construction. In parallel, there has been a sharp acceleration of input prices for construction materials (Graph 12), which can be expected to have an inflationary impact on house prices, both directly for new housing and renovations, and indirectly on other buildings. These short-term effects can be expected to work their way through the system. However, the pre-existing low level of housing supply remains a structural feature, which should continue to underpin house prices, through its impact on restricting supply.

Graph 11: Housing permits, EA-19, 2003-2021



Source: Eurostat.

Graph 12: Deflated construction input prices, EA-19, 2019-2021



Note: The deflated construction input prices is the ratio between construction input prices and the GDP deflator. This indicator therefore measures inflation in the construction sector inputs relative to inflation in the total economy.

Source: Eurostat.

**An unanticipated development in the pandemic is that demand for housing held up, in contrast to previous crises.** The expectation at the start of the pandemic was that the disruption to economic activity would lead to a fall – or at least a deceleration in house prices – as demand dried up. This has not occurred. A large part of the explanation lies with the success of the support measures introduced across the euro area, which were able to support household incomes despite the fall in GDP. In parallel, reduced consumption opportunities may have played a role in freeing up household income that might otherwise have been used for other purposes. In addition, the pandemic may have changed some structural features related to preferences, as teleworking and working from home, drove demand for more spacious housing and demand in alternative locations. Over time, house prices have closely tracked income overall. However, since 2019, and particularly since the pandemic, the relationship has decoupled, with house prices accelerating much faster than income (see section 3).

**The house price increases have been driven by inflexible supply over the last years, which limits the prospects for a significant price correction.** The reduced supply response has meant that demand for housing has resulted in higher prices than would otherwise have been the case. With few prospects that this restrained supply will be expanded markedly, the risk of feedback loops between house prices, mortgage financing, the financial sector and construction sector seems limited. The constrained supply means that there are fewer prospects for a sudden and sizeable price correction in the market – at least on aggregate. Current conditions are thus less likely to lead to a glut of

construction activity and – by extension – economic growth dependent on this demand. Nevertheless, the recent acceleration in mortgage lending suggests that the further developments should be carefully monitored. In addition, while the overall figures point out that the likelihood of a possible downward correction to prices is not very high, the ability of households to meet their interest payments could become a concern, particularly if faced by shocks to their income or to their mortgage costs.

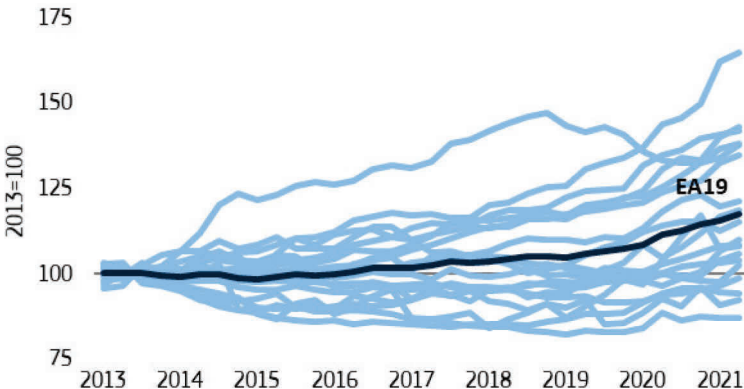
### 3. HOUSING AFFORDABILITY: PRICE-TO-INCOME RATIOS

#### 3.1 OVERALL TRENDS IN THE EURO AREA

**Housing affordability expresses the relationship between a household's income and its housing costs.** As a standard approach, the default is to gain a sense of how the median household is able to finance its main residence. This is not only based on house prices and household income alone, but also on financing conditions and regulatory rules. While reduced access to financing and stricter regulatory rules can keep house prices lower by reducing demand, they also mask affordability difficulties by excluding certain households from financing that would enable them to purchase dwellings that at face value they appear to be able to afford. This is one reason for considering affordability according to several dimensions, as indicators using just the median provide only a partial picture.<sup>5</sup>

**Across the euro area, house prices broadly followed incomes until 2019, before more sustained growth started to significantly affect housing affordability.** As a starting point, housing affordability can be measured in terms of the house price-to-income ratio (PTI) of a median-income household at a country level. Since 2013, the increase in house prices has exceeded household income growth in 15 out of 19 Member States of the euro area and by more than 20 percentage points in 7 of them. As can be seen in Graph 13, most of this increase has occurred recently. For the median household, purchasing a home is therefore a greater multiple of income, leading to higher capital payments. On the other hand, the wealth of home owners increased as during this time the value of their property increased, in excess of the growth of incomes in the economy. The increase in home ownership is also linked with the increasing unequal distribution of housing wealth between cohorts and occupational classes in countries with predominant market-based provision of housing (Wind et al., 2017).

Graph 13: Price-to-income ratio, euro area countries, 2013-2021

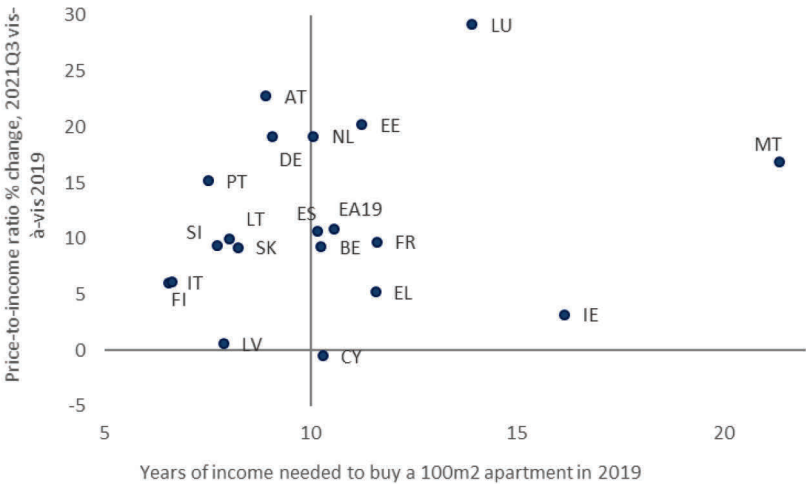


Source: Eurostat.

<sup>5</sup> Annex 1 summarised different concepts and measures of housing affordability.

**For many households in the euro area, buying a family apartment requires ten or more years of income.** Graph 14 relates the cost of a 100 square metre apartment to annual income levels, providing an overview of how the level (rather than the change) of house price-to-income affordability looks. The graph uses data from DG ECFIN’s regional house price database,<sup>6</sup> and compares regional estimates of house prices to local gross disposable household income – measured at the NUTS2 level, where available, to illustrate the relative cost of housing. As the graph shows, for households in several countries, the number of years of income needed to purchase a 100 square metre apartment is substantially higher than 10 years. Moreover, the data on years of income needed relate to 2019 as they are only available with a lag. This means that they do not contain the more recent increases when price-to-income ratios increased at their (overall) fastest rate. Overall, some of the largest increases in the price-to-income ratios were observed in countries that already displayed high house prices relative to incomes a decade ago: this is the case for Luxembourg where the price-to-income ratio increased by 54 percentage points and a household needs 14 years of income to buy a 100 m<sup>2</sup> apartment and in Ireland where the price-to-income ratio increased by 36 percentage points and 16 years of income are currently needed to buy a 100 m<sup>2</sup> apartment.

Graph 14: House price-to-income ratio change and years of income needed to buy 100m2 apartment



Source: Eurostat, own calculations.

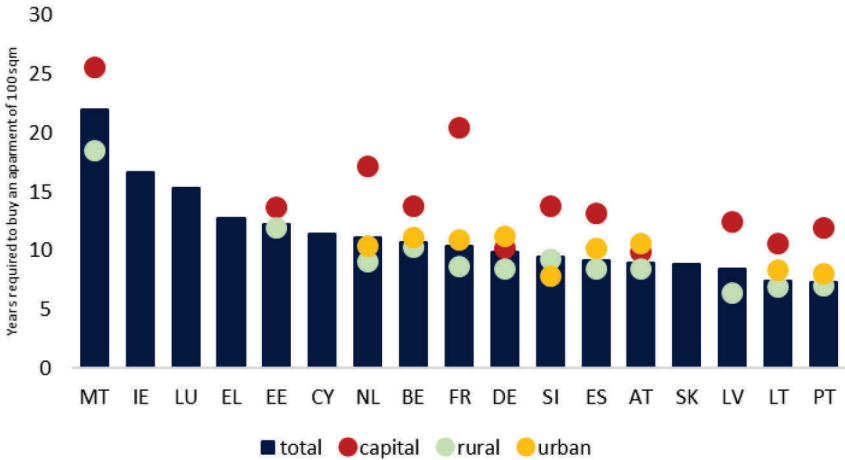
### 3.2 REGIONAL PERSPECTIVE

**Housing affordability has an important regional dimension, with urban areas being particularly affected by high prices.** Regional level data on income and housing prices confirm large differences in housing affordability across regions. Graph 15 shows different estimates of housing costs (measured as the number of years needed to purchase 100 m<sup>2</sup>) by type of area. It distinguishes between the capital, metropolitan areas (labelled as urban) and non-metropolitan areas (labelled as rural). The data show a clear picture of affordability concerns in urban areas. This regional dimension can be further seen in Graph 16, which displays the data on a map – for the countries where they are available. Beyond the impact of capitals – and other economically significant urban areas, it also shows that affordability is a stronger concern in certain areas associated with tourism. Coastal areas, and some mountainous areas such as the Alps also show strong (un)affordability pressure. While house prices

<sup>6</sup> “Mapadomo: a database on regional housing markets”, Note by the Commission for the attention of the EPC LIME Working Group, April 13 2021. The beta version of the dataset is available in [https://b1web.westeurope.cloudapp.azure.com/housing/regional\\_hp/](https://b1web.westeurope.cloudapp.azure.com/housing/regional_hp/).

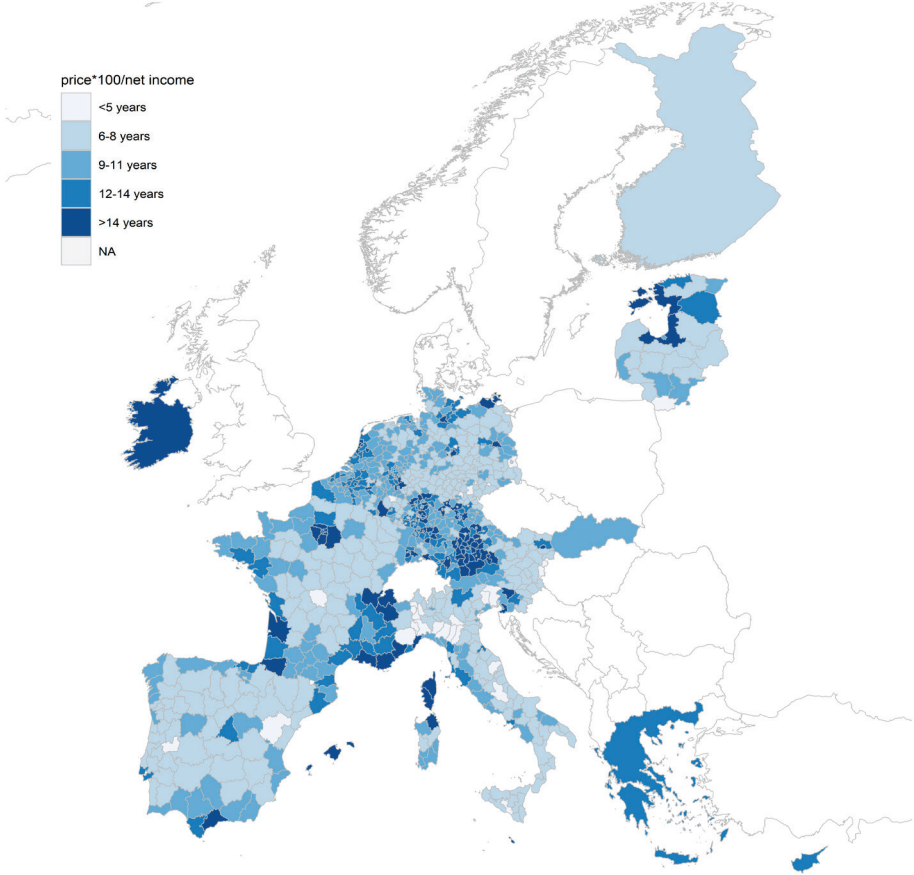
grow faster in attractive urban areas, rents seem to grow at a lower pace (Amaral et al. 2011), making renting a potential alternative – if sufficient supply of rental housing is available.

Graph 15: Years of income needed to purchase 100 sqm, by degree of urbanisation, EA countries, 2019



Source: Eurostat, own calculations.

Graph 16: Years of income needed to purchase 100 sqm, NUTS-3 regional average, 2019



Source: Eurostat, "Mapadomo: a database on regional housing markets", the Commission's note for the attention of the EPC LIME Working Group, April 13 2021. Note that this map includes only country-level data for Ireland, Greece, Cyprus, Slovakia and Finland only at a national level. The beta version of the dataset is available in [https://blweb.westeurope.cloudapp.azure.com/housing/regional\\_hp/](https://blweb.westeurope.cloudapp.azure.com/housing/regional_hp/).



**The regional dimension of housing affordability is driven by many different economic, geographical and political effects.** Urban areas are typically more productive, so firms choose to locate their branches there to benefit from qualified labour force and the agglomeration efficiencies of firms operating in similar industries congregating in the same physical space (Feldman and Florida, 1994; Porter and Clark, 2000). This leads to higher wages which push up prices as owners are able to extract (economic) rent from this greater productivity. This would lead to increased prices but would not be reflected itself in higher price-to-income ratios. However, the limited ability to increasing supply in urban areas – particularly those constrained by physical boundaries such as rivers and mountains – limits the expansion of supply and drives house prices even further. As is set out in Section 7.2, expanding both supply and accessibility into cities from surrounding areas through public transport can alleviate some of these pressures on housing costs. While one of the legacies of the pandemic may be a lasting increase in working from home – with a shift of housing demand from urban settings to more suburban or rural areas – in practice these changes are unlikely to result in substantial changes to urban housing affordability in the short term. Such a shift is stronger in cities where house price differences were larger before the pandemic and where moving to the periphery provides more green space but still allows an easy access to high-speed internet (Ahrend, et al., 2022). Conversely, in some cases, local pressure in specific rural areas, owing to an influx of urban workers able to offer higher prices, could push up prices and undermine affordability.

## 4. HOUSING AFFORDABILITY: THE BURDEN OF HOUSING COST

**As a complement to price-to-income ratios, the housing cost overburden rate provides a complementary insight into housing affordability at country level.** This measure<sup>7</sup> quantifies the share of the population living in a household where housing costs (net of housing allowances) represent more than 40% of the total disposable household income, for both home owners and renters. The housing costs computed for that purpose include structural insurance, mandatory services and charges as well as the cost of utilities but also mortgage interest payments (net of any tax relief) for owners and rent payments. Critically, the housing cost overburden concept does not include the repayment of mortgage capital. This means that it should be interpreted with care, and considered alongside other measures of housing costs, in order to get a global picture of the impact of house prices.

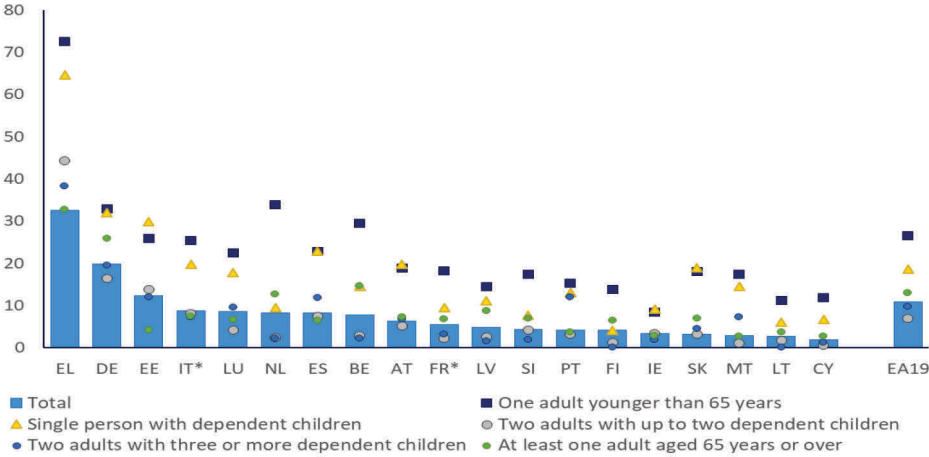
**The extent to which households suffer from housing cost overburden depends on their characteristics, with single person households being particularly affected.** Differences can be very pronounced, not only across countries but also across household types, income groups or tenure status of households within the same country. In all euro area Member States, single people reported a significantly higher housing cost overburden than households composed of at least two adults in 2020 (Graph 17). This result is consistent with economies of scale from sharing housing. Conversely, households with two adults are more able to share the cost of housing, resulting in lower estimates of overburden in all countries. This is more diverse depending on the number of children the parents have. A greater share of families with three or more children are overburdened with housing costs than those with fewer children, but this does not hold in all Member States. Furthermore, working age families are more likely to be affected by housing overburden than seniors aged 65 or older, although this is not true in all countries and the overall difference is small.

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<sup>7</sup> <https://ec.europa.eu/social/main.jsp?catId=818&langId=en&id=62>.

**In terms of the tenure status, housing overburden is mainly a concern for private-market renters.** Graph 18 shows the share of households spending over 40% of their income by tenure status. In nearly all countries, tenants renting at market prices face the highest rates of overburden. Given the absence of capital repayment in the cost of housing used to construct this indicator, it is to be expected that a very small share of owners will devote over 40% of their income to remaining housing costs, particularly given historically low interest rates. The graph shows that, in a number of countries, a substantial share of renters spends over 40% of their income on housing, with those paying market rent (as opposed to the reduced rate) being the most affected. There is considerable variation in housing overburden among reduced-rate tenants across countries, with some (such as in Germany, Luxembourg and Austria) facing overburden rates that are not very different from those encountered by renters at market rates, while in many other countries the rates are markedly different. Cross-country differences in the structure of social housing and other housing assistance programmes are likely a key factor for the divergence in such outcomes.

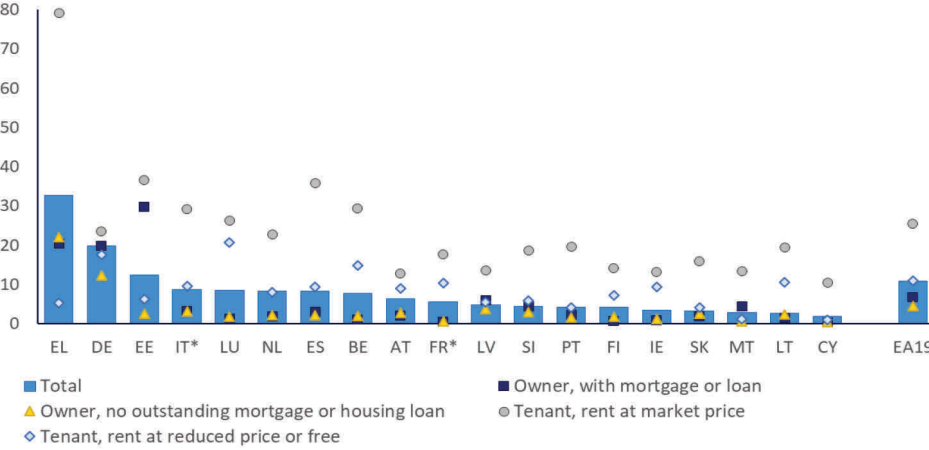
Graph 17: **Overburden rate – by household composition, EA countries, 2020**



Note: The “overburden rate” represents the share of the population living in a household where housing costs (net of housing allowances) represent more than 40% of the total disposable household income. Housing costs include structural insurance, mandatory services and charges as well as the cost of utilities but also mortgage interest payments (net of any tax relief) for owners and rent payments. Critically, the housing cost overburden measure does not include capital repayments of mortgages.

Source: Eurostat (EU-SILC).

Graph 18: **Overburden rate – by tenure status, EA countries, 2020**



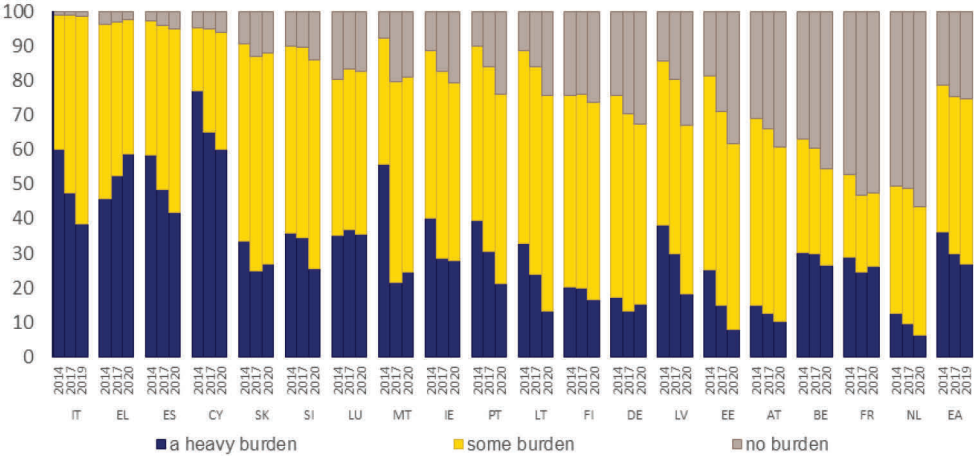
Note: see notes to Graph 17 for details.

Source: Eurostat (EU-SILC).

**Most households in the euro area perceived their monthly housing cost as a burden, in some countries around half of households perceive it as a heavy burden.** Graph 19 shows the percentage of households that assessed their monthly housing costs to be a heavy, some or no burden. It is clear that while there is considerable variation across euro area countries, concern about the income burden of housing is widespread, although, if anything, showing small reductions. These data show that a much higher percentage of households consider themselves to bear a heavy burden relating to their housing costs than the percentage that faces an overburden as measured by the overburden rate. The inclusion of capital payments in the self-assessment of mortgage payers plays a significant role, as does the subjective nature of this measure, which may limit the scope for cross-country comparison. Moreover, the same share of income spent on housing may feel very different at lower income levels, as for these households the remaining part of their income may not be enough to cover other expenses. Surveys (Acolin and Reina, 2022) suggest that the EU households that are obliged to spend higher shares of their incomes on housing (notably for these spending over 50%) report significantly lower levels of life satisfaction, irrespective of tenure status.

**Overall, the share of EU household income spent on mortgages has been falling for owners, while the share spent by renters has shown some increases in the last years.** Graph 20 shows the share of income spent on mortgage costs (principal repayment and mortgage interest) in 2010, 2014 and 2019. Graph 21 presents the share of disposable income spent on rents in the private market (including also subsidised rents). The housing costs<sup>8</sup> for owners have decreased in recent years in terms of the income share, mostly due to lower interest rates. In all countries, except Germany and Cyprus, the share of income devoted to rent has shown some increase. Over time, an increase in house prices affects housing affordability typically negatively for those in the bottom half of the income distribution: these are households that may wish to buy a house but that in fact rent housing, as the increase in prices will be translated into larger increases in rents only in the long run (Gallin, 2004). With the additional growth of house prices between 2019-2022, more pressure can be expected on rental prices, also due to increasing inflation which the rents are sometimes linked to.

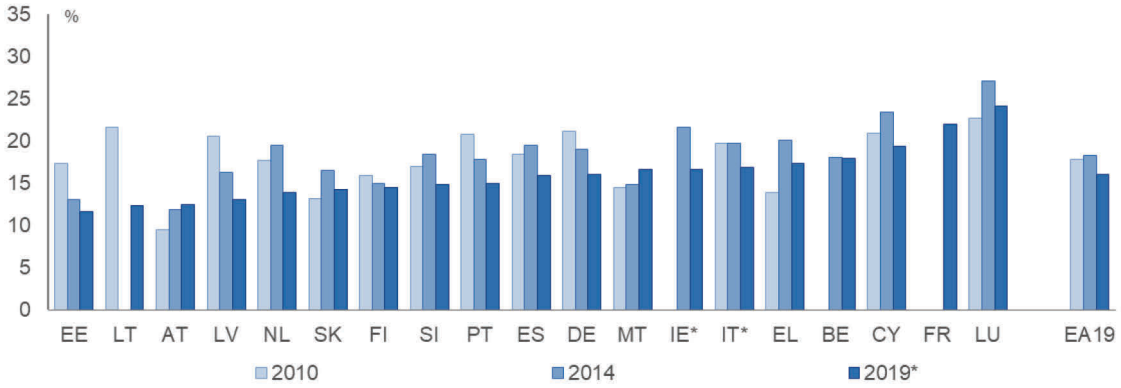
Graph 19: Percentage of households perceiving monthly housing costs to be a heavy burden, some burden or no burden (households' self-assessment)



Source: Eurostat (EU-SILC).

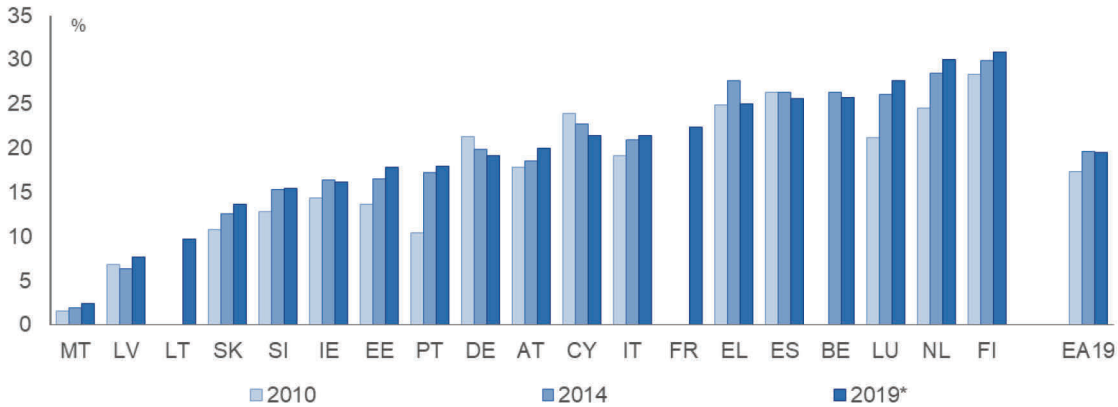
<sup>8</sup> The group of house owners include all households with mortgages, therefore most of them do not face the recent house price increases as they bought their houses earlier.

Graph 20: Households' mortgage costs as a share of disposable income



Note: \*Latest data is 2018. The euro area aggregate (EA-19) is a simple average across Member States. Source: OECD (Affordable Housing Database).

Graph 21: Households' rental cost burden as a share of disposable income



Note: \* Latest data is 2018. The euro area aggregate (EA-19) is a simple average across Member States. Source: OECD (Affordable Housing Database).

## 5. HOUSING AFFORDABILITY: THE HOUSEHOLD BORROWING CAPACITY

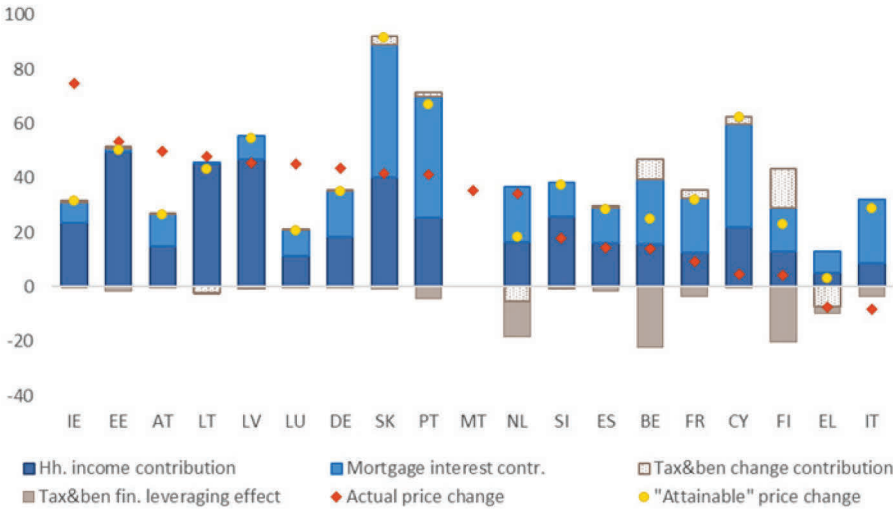
**A significant driver of demand for housing is the borrowing capacity of households, which also provides an insight into whether properties remain attainable to borrowers.** The borrowing capacity of households can be understood in two ways: i) the capacity to service loan repayments including the principal, which primarily depends on household income and interest rates; and ii) the initial access to the mortgage credit in terms of possessing enough assets to purchase the required equity portion. Both factors are modulated by public intervention, such as tax and benefits, changes to regulations or macroprudential limits (loan-to-value limits, debt-service-to-income limits). Any improvement in borrowing conditions also affects the cost to households for a unit of debt, enables them to service a higher level of debt for given income. The resulting increase in demand can, in turn, contribute to rising house prices.

**The house price surge since 2019 has stretched households' capacity of servicing borrowing costs.** Graphs 22 and 23 show an estimate of how the “attainable” price of the euro area housing has

changed since 2013 following a methodology of Andrie and Plašil (2019). If households devote a constant share of their income to servicing debt, then the decline of mortgage interest rates during the 2010s allowed them to ‘attain’ a property price increase. The estimates are based on a number of factors that affect the relationship between property prices and households’ debt-servicing capacities. During the 2010s, rising nominal household incomes and declining mortgage interest rates contributed to increasing ‘attainable’ prices, with tax and benefits leveraging those effects.<sup>9</sup> Graph 23 documents a gear change during the pandemic. Between 2013 and 2019, about half of Member States saw house price increases exceeding the changes in household borrowing capacity, mainly among higher income countries. Since 2020 however, this trend has increased and spread. Between 2019 and 2021, house prices increased at a rate above the change in debt service capacity of household in all but five euro area countries.

**Low interest payments have been a determining factor for the amount of debt euro area households have been able to service in recent years.** Although there are strong differences across countries – and the data need to be considered with care – it is clear that a reduction in mortgage interest payments has been a determining factor in enabling households to meet the servicing costs of their mortgage over the years since the global financial crisis. This can be seen by comparing the actual increase with the attainable increase in the absence of the mortgage interest contribution (Graph 22 and 23). The data also show that the contribution of tax and benefit changes have reduced the ability of households to service larger amounts of debt. In the case of the tax and benefit changes, this represents a reduction in the subsidies (usually in the form of mortgage interest tax relief) that has taken place in a range of countries (Barrios et al., 2019).

Graph 22: **Attainable house price change of households in the euro area, 2013-2019**

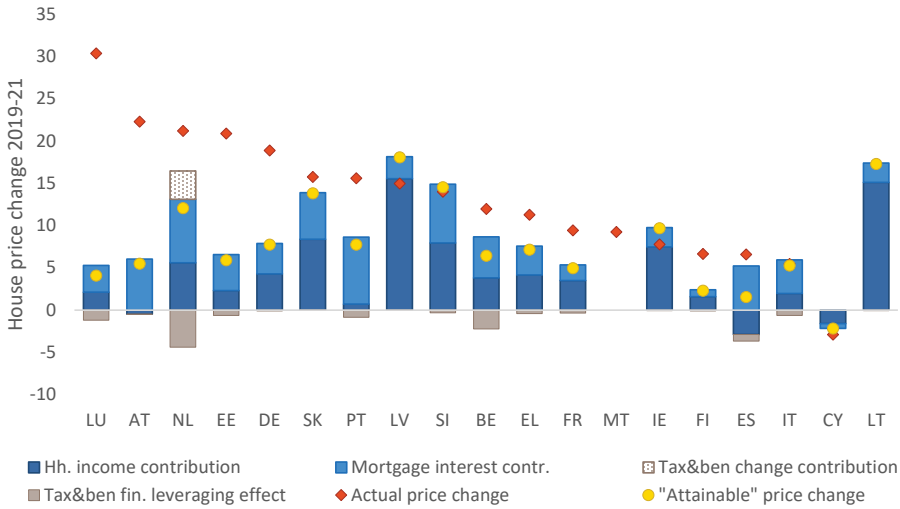


Note: For Italy, latest available data is 2019. Some data are missing for Malta. The attainable house price change is based on an augmented version of the attainable housing value of Andrie (2017). The definition of underlying data follows Barrios et al. (2019) in its Thimann et al. (2020) formulation. Notably, ‘tax&ben change contribution’ captures the impact of changes to recurrent property tax or imputed rents taxation, and mortgage interest deductibility, ‘Tax & ben leveraging effect’ derives from comparing the ‘attainable house price’ due to interest and income changes when taking tax&benefits into account, vis-à-vis a situation when tax and benefits would be non-existent. In this graph, mortgage interest deductibility in NL, BE and FI has attenuated the positive impact from the mortgage rate decline 2013-2019.

Source: Own calculations.

<sup>9</sup> The contribution of household income is straightforward but bounded by a debt-service-to-income ratio that is included in the model. The impact of the mortgage-interest contribution is modelled using average mortgage-interest rate data per country and year, to determine the contribution of any interest rate changes to the borrowing capacity of households. Tax and benefit changes are included, as they can affect the relationship between gross income and mortgage payments. Finally, the model assumes no changes to the loan-to-value ratio.

Graph 23: **Attainable house price change of households in the euro area, 2019-2021**

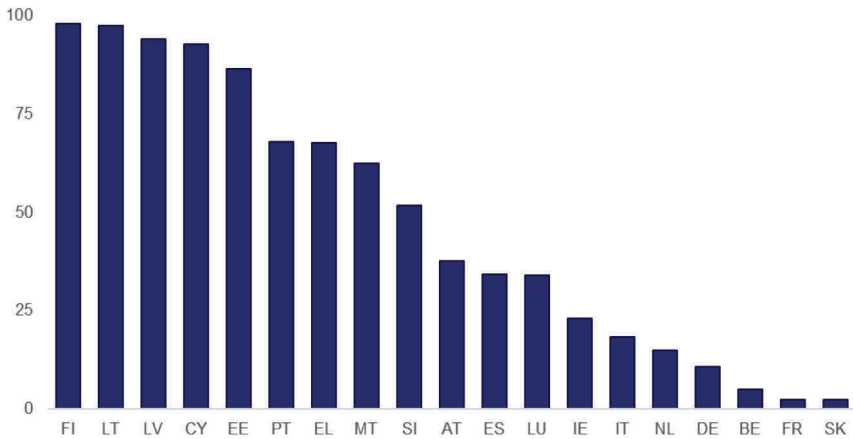


Note: For Italy, latest available data is 2019. Some data are missing for Malta. See notes to the previous graph for a description of underlying concepts.

Source: Own calculations.

**The low interest rates that have enabled more borrowers to take larger loans represent a risk when financing conditions tighten.** While low interest rates have reduced the financing costs of mortgages, they have driven total prices up and hide repayment risks. This is an important factor in Member States where variable-rate mortgages predominate, and/or where fixed rates only cover a part of the mortgage term (Graph 24). Future increases in interest rates can affect housing affordability for owners with mortgages through higher interest payments. They may also lead to a rebalancing of house prices as prospective owners are less able to afford high prices. The resulting decrease in demand would reduce the value of current owners’ property. This reduction decreases the net housing wealth available, which corresponds to the value of the property minus the outstanding loans.

Graph 24: **Share of variable rate loans in total loans for house purchase, EA-19, 2020**

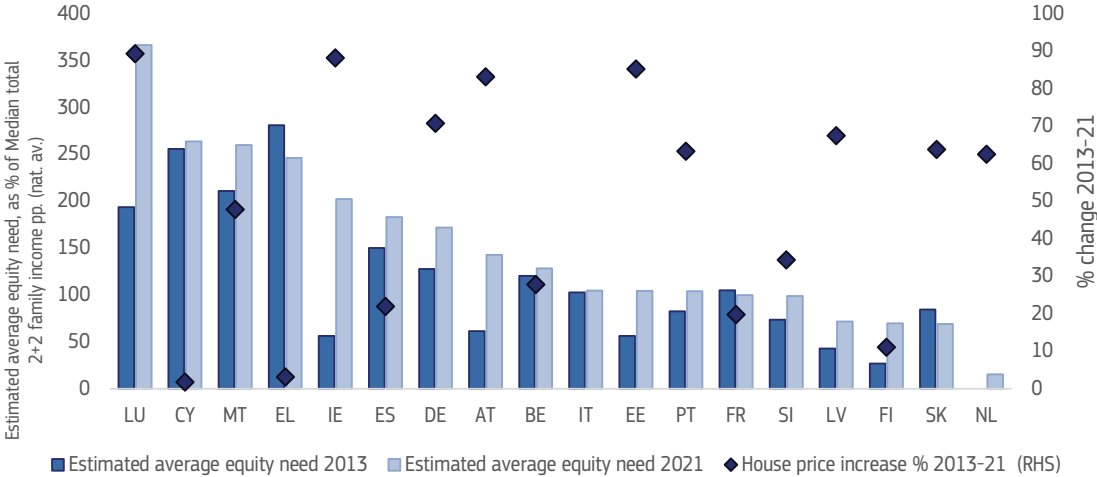


Source: ECB.

**High prices, driven in part by low interest payments, also mean a larger required equity portion to purchase a home, which can price households out of the housing market.** Graph 25 compares the equity needed across the euro area countries, as a share of annual disposable income. In some countries, access to mortgage requires the ability to make a considerable down payment, which is likely to be outside the capacity of many families. Stringent loan-to-value limits on mortgages mean

that households with lower wealth or lower past incomes face more difficulties to secure a mortgage despite low interest rates. While these limits have been appropriately put in place to protect both borrowers and banks from over-extended mortgages, they have the side-effect of excluding some households from mortgages.<sup>10</sup> In most of the euro area Member States the required down payment for an average dwelling exceeds the annual disposable income, reaching over 350% of it in the case of Luxembourg in 2021. The data in Graph 25 shows that between 2013 and 2021, the value of required down payment increased as a share of income in all euro area countries but France, Greece and Slovakia. With the subsequent increase in house prices above income, the need for a down payment is likely to make it more difficult to acquire a house. Overall, the decline in interest rates meant that the house price increase from 2013 to 2019 hardly raised annual housing costs for home buyers with a mortgage – but reduced the number of people having enough equity at their disposal to be eligible for a mortgage. Since 2020, surging house prices have made home ownership more difficult to attain in almost all euro area Member States.

Graph 25: **Equity need for access to mortgage, % of income, EA-19**



Note: This graph represents the estimated equity need for purchasing an 'average' dwelling (average size, average price per sqm) according to the LTV limits prevalent in the respective country and year. These LTV limits are taken from the JRC Housing taxation database (Barrios et al., 2019). The vertical axis expresses this need in % of the national median total income of a family with 2 adults and 2 minors. Note that LTV limits for the Netherlands in 2013 in that database exceeded 100%. Data for Lithuania is missing.

Source: Own calculations.

## 6. THE MACROECONOMIC IMPLICATIONS OF WORSENING HOUSING AFFORDABILITY

**The global financial crisis highlighted the destabilising impact that house price booms can have on the whole economy.** The interaction between the housing market and the financial system can play a central role in the macroeconomic outcomes and stability. Rising prices and increased credit represent a risk when economic or financing conditions worsen, and can yield damaging feedback loops throughout the financial system and the wider economy, amplifying and extending shocks. The

<sup>10</sup> In the absence of these limits higher demand would push prices up. However, it means that housing may look more affordable when compared with times where limits were less stringent without actually being so.

experience of the global financial crisis led to a range of measures being taken in the macro- and microprudential fields to reduce the risks related to household mortgage borrowing. As a result, until very recently, the increase in house prices has not been accompanied by a major expansion of credit that would feedback to housing prices – although as of late 2021 an acceleration of mortgages is evident. So far, there has not been a notable shift of economic activity towards construction.

**Increasing house prices deteriorate housing affordability, which has important economic consequences.** While the immediate risks from rising house prices relate to financial stability, a deterioration in housing affordability over time can have wider economic consequences. These relate to the impact that they have on household decision-making, which can undermine aggregate demand in the shorter term, and affect growth negatively over a longer time horizon. Increasing house prices can lead to more and more saving from households and can lead to a misallocation of resources away from productive investment.

**Housing affordability, measured by various indicators, has worsened in the euro area during the last ten years, most notably since the pandemic.** For the median household in several euro area countries, purchasing a home requires a large multiple of income per person, i.e. substantially higher than 10 years of annual income to buy a 100 square metre apartment. Housing affordability is a stronger concern in urban and touristic areas. Most households in the euro area perceive their monthly housing costs as a burden. Since the global financial crisis, the main factor in enabling households to meet the servicing costs of their mortgage has been a reduction in mortgage interest payments. However, the looming monetary policy normalisation to counter increased inflation is likely to worsen the ability to service the mortgage debt.

**Worsening housing affordability can undermine aggregate demand through its impact on household behaviour, with euro area wide consequences.** An increase in the housing burden on those at the lower end of the income distribution can affect economic choices, which has macroeconomic implications. Increased rental prices reduce the amount of income available for household consumption (and investment), especially among lower income households with higher marginal propensities to consume. This same effect can be present among new buyers with mortgages who are obliged to stretch themselves financially to be able to buy a home, to save the necessary deposit and then meet the monthly payments reducing their consumption of other items. The transfer of income from those at the lower to those at the higher end of the income distribution has the effect of reducing aggregate demand, at a time when persistently weak aggregate demand is a concern for the euro area.

**The social implications of reduced housing affordability are important themselves but have economic consequences too.** Rising house prices and reduced affordability have implications for intergenerational aspects of inequality, affecting new – and therefore primarily young – households. The inability to access housing and the financial impact of affordability pressures can lead to delays in, or constraints on, household formation for younger generations, exacerbating demographic pressures linked to lower birth rates. Lifecycle effects may weigh on the state, as the current generation of young adults may reach retirement with fewer savings, other than the value of their home. Social cohesion can be undermined as younger generations are priced out of their neighbourhoods, weakening social support networks for both the elderly and for families with young children and caring needs.<sup>11</sup>

**The regional dimension of housing affordability is economically important at both national and euro area level.** Cities are marked by increasing productivity differentials relative to rural areas (OECD, 2019). Assortative matching of productive firms and productive workers as well as know-how spillovers drive productivity and innovation. While the resulting higher productivity and wages are important drivers of urban house prices, they can also be undermined by increasing house prices.

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<sup>11</sup> Gabriel and Painter (2019) conclude for the US that the high rental burden induces residential overcrowding, lower spending on other vital needs including education and healthcare and pushing people to live in more distanced areas, which in turn puts pressure on the transport and includes long commuting time.



Lower housing affordability can reduce labour mobility towards more developed, productive regions, with valuable workers choosing to move to less dynamic places where lower wages are more than compensated by lower housing costs (Hsieh and Moretti, 2015). Over time, this can result in labour shortages in the fastest developing regions, hampering economic growth, innovation and productivity growth. This effect may have regional conditions at its sources, but its impact is not just national but also euro area wide, through the effect that it has on growth rates and spillovers.

**While housing affordability represents a challenge for most urban agglomerations, its gravity depends on the elasticity of housing supply.** In this respect, supporting economic growth requires an adaptation of public transport and an upgrade of local infrastructure, in order to provide liveable alternatives to ease the supply pressure felt by productive cities which are affected both by physical constraints and regulations. In recent years, the rise of short-term rental platforms such as Airbnb became an additional phenomenon putting more pressure on housing markets in many capital cities but also attractive tourist destinations (Horn and Merante, 2017; Crowe, 2021; Kerbler and Obrč, 2021), although the pandemic appears to have tempered that effect, at least in the short term.

**The expectation of a sustained ability to extract economic rent from housing can displace productive investments and, as a result, undermine growth.** As set out in section 2, limits to housing supply enable owners to extract economic rent from their property, absorbing productivity gains and positive spillovers in their geographical vicinity due to the quasi-monopolistic behaviour of property markets in economically successful locations. This delivers capital gains, despite property in itself not becoming more productive. While the euro area banking system provides more mortgage credit to households than than credit to non-financial companies for productive investment (Martins et al., 2021b), a range of economic studies shows that credit to non-financial firms is correlated with increased output, in a way that mortgage credit is not (Ryan-Collins et al., 2017).<sup>12</sup>

## 7. POLICY MEASURES AFFECTING HOUSING AFFORDABILITY

**Housing affordability is affected by various public policies implemented both at national and sub-national level.** House prices in general, and housing affordability in particular are affected by many factors and policies, spread across different areas of government. At a national level, house prices are affected by policies whose primary aim may not be the housing market but may have other objectives such as macroeconomic stabilisation and financial stability.<sup>13</sup> In addition, there are many tax and benefit measures that can and do affect the cost of housing, acting on both the supply and the demand side. Many structural policies and regulations aimed directly at housing markets are implemented on regional and local level, making housing affordability at country level difficult to achieve. Integrated governance is important to provide urban policy making that is responsive to the lasting changes that are likely to arise in the future (OECD, 2021). Several European countries with a strong welfare state tradition have a long history of specific housing policies, supporting both owner occupation and rental housing by demand and supply side programmes. As a result, housing markets are heavily regulated in many European countries, but in a range of different ways (Ball, 2016).

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<sup>12</sup> A study of forty six economies over 1990-2011 found a negative relationship between the stock of bank lending to domestic real estate and economic growth, but positive growth effects from credit to non-financial companies (Bezemer, Zhang and Grydaki, 2016).

<sup>13</sup> Monetary policy is not discussed in this section, which is aimed rather at policies that are implemented at the country level. However, the impact of monetary policy stance on housing markets was discussed in the background material for the previous Eurogroup thematic discussion on housing, see Martins et al. (2021b).

**There can be a trade-off between the short- and longer-term impact of policies aimed at protecting housing affordability on the demand side.** Policies that aim to reduce the cost of housing through subsidies to particular groups of individuals in the rental or housing markets may be effective at supporting affordability for these groups in the short term. However, these subsidies are at least partially transferred to home owners, propping up either house prices or rental costs. The extent to which they do so depends on the dynamics and structure of national housing markets, and the types of subsidies, and who they target.

**In order to effectively manage the gradual increase in housing costs and the resulting affordability pressures, policies are needed mainly on the supply side.** These policies are needed to ensure that there is sufficient supply in order to counteract the shortage that translates demand into high prices. To be effective, supply-side policies targeted at particular areas where there is a build-up of pressure are needed, meaning that regional aspects are important. Supply-side policies cover a range of possible interventions aimed at increasing the amount of accessible housing.

**The taxation of property offers the possibility of financing to the public sector that does not distort economic activity and housing affordability.** The taxation of capital gains accruing to house owners can lead to economic efficiency gains, particularly if new taxes are used to replace more distortionary taxes. Such taxation moves are not easy to implement politically as they involve taxing a well-defined group. The holy grail in economic terms is the imposition of a land value tax that eliminates the scope for property to be used to extract economic rent. A range of other improvements are possible in many cases that can remove some of the more perverse incentives for the economy to divert resources to the accumulation of property at the expense of affordability for larger parts of the population, with negative economic consequences.

## 7.1 MACROPRUDENTIAL POLICY AND MORTGAGE-RELATED REGULATION

**Numerous macroprudential tools addressing real estate-related risks have been implemented in the last decade.** Macroprudential policies are aimed at safeguarding the stability of the financial sector, by reducing risks associated with mortgage credit. As they address the real estate-related risks at source, they can achieve higher effectiveness compared with alternative policy instruments in terms of taming the boom-bust cycle. Most euro area countries have implemented a mixture of macroprudential measures targeting the lenders (countercyclical capital buffer, sectoral capital requirements, risk weights) and/or the borrowers (limits on loan-to-value (LTV) ratios, limits on debt-service-to-income (DSTI) ratio, limits on loan-to-income).<sup>14</sup> Despite diverse drawbacks and implementation issues, the empirical evidence confirms the particular effectiveness of borrower-based measures such LTV and DSTI limits (see Martins et al., 2021b for the review of studies). The experience of recent years when house prices significantly outpaced the credit growth may well partly reflect the impact of macroprudential measures.<sup>15</sup>

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<sup>14</sup> 14 out of 19 countries implemented at least one instrument related to residential real estate (LTV limits, DSTI limits, heightened, risk weights on real estate exposures or LTI caps). Limits on LTV are the most common macroprudential tool used by the euro area countries to address residential real estate risks, with 13 countries applying a cap on the LTV ratio. The COVID-19 shock was followed by several supportive policy measures, which included also macroprudential policy. In all euro area countries, except Austria, Cyprus, Spain and Luxembourg, some easing of macroprudential measures was implemented. However, this meant mainly lowering Countercyclical Capital Buffers (CCyB) and Systemic Risk Buffers (SyRB) rates rather than easing of borrower-based measures, which were relaxed only in Finland, Malta and Portugal (in any case, without concerning caps on the LTV ratio).

<sup>15</sup> Macroprudential measures are monitored by the European Systemic Risk Board (ESRB). In September 2019, the ESRB issued country-specific warnings and recommendations on medium-term vulnerabilities in the residential real estate sector to nine Member States: recommendations to Belgium, Denmark, Finland, Luxembourg, the Netherlands, and Sweden, and warnings to Czechia, France, and Germany. Of the former group of countries, all had already received warnings by the ESRB in November 2016, and the same held for Austria. In February 2022, the ESRB issued new edition of warnings and recommendations, warnings were issued for Bulgaria, Croatia, Hungary, Liechtenstein and Slovakia and recommendations were issued for Austria and Germany. The Macroeconomic Imbalance Procedure (MIP) Regulation (Regulation EU No.

**While macroprudential policy caters for financial stability, it may have more mixed effects on housing affordability.** The macroprudential tools are targeted at ensuring financial stability. Namely, the objectives are to prevent excessive credit growth and leverage, excessive maturity mismatch and market illiquidity, direct and indirect exposure concentration, and misaligned incentives. These policies typically reduce demand and act to keep house prices more modest. However, by restricting credit supply, macroprudential tools may have also distributional consequences and impact an access to credit and home ownership affordability, affecting in particular younger debtors with low equity. These can be exacerbated in the presence of other distortions, as set out below (Svensson, 2018). A potential adverse effect on housing affordability is also supported by cross-country evidence (e.g. Alam et al., 2019) suggesting that macroprudential tools have a stronger impact on mortgage credit than on house prices.

**The experience with easing macroprudential tools has been very limited despite some relaxation during the pandemic, and its impact on affordability is hard to assess.** After a decade of activation of macroprudential tools across the euro area, some measures were relaxed during the pandemic alongside other policy support tools. While most countries eased the capital-based measures, namely the countercyclical capital buffers, only Finland, Portugal and Malta temporarily eased borrower-based measures. The experience with the transmission of macroprudential easing is still very limited. In fact, the transmission of macroprudential measures may be asymmetric as these measures are aimed at preventing a credit driven boom rather than at supporting credit provision in a downturn. Moreover, as the pandemic experience showed, financial stability risks may increase even during the downturns as house prices accelerated amid increasing mortgage credit and household indebtedness. This opens room for further macroprudential tightening. Recent empirical evidence for the EU (Poghosyan, 2020, Mokas and Giuliadori, 2021) suggests that borrower-based measures are able to curb both house prices and mortgage credit. However, the full impact is materialised only after several years and if the macroprudential measures had been designed properly. Their impact is, in general, stronger for legally-binding measures and measures involving sanctions.

## 7.2 STRUCTURAL POLICIES AND REGULATION

**The housing supply elasticity plays a crucial role for affordability in the long run and it varies across countries.** The long-run price elasticity of housing supply varies substantially across OECD countries (Caldera and Johansson, 2013).<sup>16</sup> The elasticity depends on both geographic constraints as well as land use and spatial planning regulation. Supply side policies can create extra housing and encourage better stock use through improving matching and transaction costs. In many large European cities, a major increase in housing supply is needed. However, delivering this in an effective way requires not just housing but supporting investments such as an expansion of critical infrastructure.

**A range of supply-side urban planning policies can affect house prices and so housing affordability.** Building regulations, land use regulations, zoning laws, the availability of developable land or energy standards for new construction can have a considerable impact on housing supply. In general, regulations add additional cost above the cost of construction, which induces higher average house prices but the impact on rents is less straightforward (Molloy, 2019).<sup>17</sup> From a longer-term view, investment in infrastructure, such as public transport and the provision of local amenities can increase

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1176/2011) calls on the Commission to take into account any warnings or recommendations addressed by the ESRB to Member States subject to an In-depth Review (IDR).

<sup>16</sup> Ball (2016) argues that supply side restrictions contributed to the boom in many European countries in the build-up of the global financial crisis. If there had been new construction, it was frequently located not in the most demanded booming areas, but in the less desirable locations. He concluded that poor local governance caused the lack of building land and sluggish supply response.

<sup>17</sup> Glaeser and Gyourko (2018) document that in highly regulated metropolitan areas of the US the house prices are higher and population growth smaller, thus regulation had overall a negative effect on the aggregate productivity.

the effective supply of suitable housing for booming urban regions considerably (Gagné et al., 2022). Well-functioning rental markets may also significantly contribute to the supply of housing since they foster the liquidity of housing markets and facilitate the labour mobility. In addition, there is a range of other policy goals that may be in conflict with the provision of additional supply or the reduction of costs, such as climate and environmental concerns. An increase in housing supply has an unambiguous negative effect on house prices with a positive affect on affordability (Been et al., 2018).

### 7.2.1 Land use and building regulations

**Land use regulation is the most important determinant of housing supply mostly with an adverse effect on housing affordability.** Zoning, land use, density and building regulations have significantly increased over the decades pursuing diverse objectives. The economic literature on the effects of regulation on housing supply provides evidence that stricter land use regulation is associated with less construction and, by extension, lower housing supply and affordability (Gyourko and Molloy, 2015, Moloy, 2019). Allowing cities to grow organically in the outskirts could improve housing affordability. Easing supply boundaries in places of high demand can bring benefits, but needs to be weighed against the need to protect environmental standards and it is also conditional on available public transport. Proper spatial planning and well developed public services can prevent urban sprawl, i.e. the disordered expansion of cities by low-density residential areas with high reliance on private vehicles.<sup>18</sup> Supplementing the regulatory reform with energy efficiency standards and applying them also to the existing housing stock, would contribute to environmental sustainability (OECD, 2021). Building regulations can also affect the cost of construction and the type of houses that may be built. These include restrictions of the total number of housing units allowed, urban growth limitations or a restriction of the floor area size which result in a smaller housing stock (Brueckner, 2009).

**Energy efficiency norms are now an integral part of building regulations.** These regulations apply to new housing units in line with energy efficiency requirements and affect the renovation of the existing housing stock, as part of the drive to climate neutrality. They are the main goals of the European Commission's initiative *A Renovation Wave for Europe - greening our buildings, creating jobs, improving lives*.<sup>19</sup> The large investment required to improve the energy efficiency of historic buildings could put pressure on rental prices, as landlords are faced with a common cost increase that they are able to pass onto renters, at least in part. This could hamper housing affordability, if rent increases exceed the savings generated from lower energy consumption. For this reason, subsidies to the cost of the renovation wave or other financing programmes could be important in terms of protecting those less able to bear the (short term) renovation costs.

**Housing has also a relevant environmental impact and policies in this area are needed to support the green transition.** Buildings in the EU are responsible for 40% of EU energy consumption, 36% of EU greenhouse gas emissions (European Commission, 2020; Leodolter et al., 2022) and the cost of energy has a direct impact on housing affordability (Haffner and Boumeester, 2015). Under the Recovery and Resilience Facility (RRF), the Commission strongly encouraged Member States, through the flagship initiative 'Renovate', to include measures in their plans to improve the energy and resource efficiency of public and private buildings.

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<sup>18</sup> Ehrlich et al (2018) analyse the spatial dispersion of settlements in Europe. They show that urban sprawl is especially important in Central and Eastern Europe but to a much lesser extent in Northern European countries. They argue that urban sprawl has a negative impact on house price growth and affordability measured by the price-to-income ratio. Thus, strict urban containment policies such as the enforcement of extensive green belts around cities in the United Kingdom reduce housing affordability. Decentralised countries tend to have more urban sprawl, which could be explained by stronger fiscal incentives to permit residential developments in the outskirts.

<sup>19</sup> See <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1603122220757&uri=CELEX:52020DC0662>.

## 7.2.2 Regulation of rental markets

**The regulation of rental markets affects housing market developments, with ambiguous effects on housing affordability.** Policy measures include rental price caps either for all or for a subset of renters. Price caps on the private rental market can have short-term appeal in the sense of restricting increases at a time of rental cost pressures. Over the more medium term however, excessive regulation of the rental market can create dual rental markets and reduce the supply of rental properties due to reduced rates of return. Preferential rental contracts can be beneficial to vulnerable renters, but also act as disincentives to changing their place of living, hampering labour mobility. This effect would be the most pronounced among the low-wage workers. Tight rental market regulations may result in supply-demand mismatches which may lead to speculative housing bubbles and excess accumulation of household debt as more households are pushed into home ownership (Kholodilin and Kohl, 2021). These in turn can undermine economic resilience as financial crises can be triggered by unstable housing markets (OECD, 2021).

**The regulation of rent levels and increase remains a key tool, and also shapes how rental market flexibility differs across the euro area.** The regulation of rents, which is the main tool of rental market regulation, has been gradually softened during the last decades. However, several euro area countries (Austria, Belgium, Cyprus, France, Germany, Ireland, Luxembourg, the Netherlands and Spain) still have systems with regulated rent increases. In some cases, the initial level of rent is regulated, while in some countries the regulation concerns only specific areas such as large cities or concerns only rental contracts concluded before a pre-defined date (Kettunen and Ruonavaara, 2020). As rent controls have been gradually phased out, there has been also a long-term increasing trend of other regulations such as eviction protection or minimum contract duration (Kholodilin, 2020).

## 7.2.3 Social housing

**Investment in social housing can contribute to easing supply bottlenecks while improving affordability for low-income household segments.** Social housing enables the government to deliver housing to low-income households. It usually takes the form of rental housing at regulated price but can also include properties for sale below the market value and under restrictive conditions. The provision of social housing expands the supply without fuelling demand, in contrast to housing allowances to vulnerable groups. Importantly, social housing also enables the state to benefit from any economic rent accruing to owners of property, which can be used to increase economic efficiency or for redistribution purposes. Depending on how it is delivered, the provision of social housing can contribute to improving job mobility and impeding economic growth, depending on its extent and how it is attributed. Flexible access to social housing can contribute to increasing productivity. In the post COVID-19 era this aspect of housing policies may have particular importance (OECD, 2021).

**The concept of social housing differs across the euro area and its share has been falling over time.** While European countries with developed welfare states pioneered the concept of social housing, its role across the EU has been falling (Whitehead, 2017).<sup>20</sup> The definition and objectives of social housing differ across the EU, as do the tools. There are historically significant differences in the supply of social housing across euro area countries in terms of size, financing, and entitlement conditions. In the euro area, large social housing sectors can be found in Austria and the Netherlands. On the contrary, CEE countries have mostly privatised their public housing stock as part of the economic transition leading to low availability of social housing. Some countries, such as France, introduced temporary tax breaks with additional tax credits to private investors increasing the supply

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<sup>20</sup> Regarding trends in the supply of social housing, during the last decades the investment in this area has declined in most euro area countries, but at a slower rate compared to the 1990s, the scale of change being greater in former socialist countries where it overlapped with restitution and privatisation policies. For evidence on different EU countries see e.g., Scanlon et al. (2015).

of new housing at controlled rents. In Italy or Spain public policies supported the development of an *affordable* housing sector which is in-between rented social housing and the private rental market.<sup>21</sup> Regardless of the form of social housing policy, its effectiveness relies hugely on local authorities whose proper governance and relationship with the central level administration are crucial for the sustainability of social housing (Poggio and Whitehead, 2017). However, there is an overall trend of the residualisation of the subsidised rental sector, which means that it is more and more aimed at a safety net for low-income households rather than being able to provide for housing needs of a broader share of population (Angel, 2021).

### 7.3 TAX AND BENEFIT SYSTEMS

**Housing taxation as a part of the overall tax system can have significant inefficiency effects.**<sup>22</sup> An ideal tax system should provide tax revenues for the government's spending and redistribution policies, while minimising the negative impact on economic growth as well as on other policy goals the government pursues. A general efficiency rule is that a tax system should not distort the choice between alternative ways of investing in capital (Mirrlees, 1971), and – in the specific case of housing – the choice between renting and owning properties (Poterba, 1984). However, these choices are often distorted by the existing tax and benefit system, which typically favours home ownership, although the effective average tax rates<sup>23</sup> as well as the composition of taxes differ significantly across the euro area. Finally, housing taxation can also create inefficiencies in the production process. Namely, taxing property that is used as an input to production might create distortions compared to other inputs that are not taxed. There is also a level playing field issue for different industries, as agricultural land is used as an intermediate input, may be taxed differently than land used for other purposes. Moreover, a mixed-use of property for both residential and business purposes is difficult to tax efficiently.

**Tax and benefit systems affect housing market developments and housing affordability.** Tax instruments come in different forms. Transaction taxes and stamp duties levied at the time of purchase and recurrent property taxes levied regularly represent the most common taxes. Capital gains taxes, which could deter speculation taxing income from selling real estate property, are less common or are more limited in their scope. The value of the property is usually the tax base for property taxes. While part of the tax is due on land values – which enables the state to claim a share of the economic rent that accrues to property owners – this does obviously not apply to the part due on structures. Imputed rent,<sup>24</sup> which corresponds to the consumption value of living in owner-occupied housing, is commonly untaxed, creating a clear tax advantage to living in owner-occupied housing versus rental housing, where tax is paid on the rental income.<sup>25</sup> This favours home ownership, and can have an adverse impact on housing affordability if housing supply is insufficient. Moreover, mortgage interest tax relief for owner-occupied property also adds to the home ownership tax bias,<sup>26</sup> while recurrent

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<sup>21</sup> In countries such as Spain 'social' housing can refer to dwellings being sold at reduced rates to eligible households, usually funded by construction such 'social apartments' on government-owned land. In Member States such as Cyprus, social housing encompasses the transfer of publicly owned land to eligible households.

<sup>22</sup> See also Gayer and Mourre (2011), Johannesson Lindén and Gayer (2012), and Leodolter et al. (2022).

<sup>23</sup> It can be calculated as the ratio of the present value of total taxes over the expected holding period of the property to the sum of the present value of imputed rent and capital gain.

<sup>24</sup> Net imputed rent is an estimate of the value representing the benefit accruing to the household due to not paying full rent. Imputed rent can be useful to compare relative value of home ownership and renting. Imputed rents can be also understood as returns to investment in housing.

<sup>25</sup> While the incidence on the tax on rental income will depend on different factors, it is fair to assume that at least some will accrue to the tenant.

<sup>26</sup> The home ownership tax bias can be calculated as the difference between the taxation on home ownership and taxation on an alternative financial investment. Investing into owner-occupied housing is taxed favourably compared to investing in a

property taxes are usually not high enough to offset the bias (see Leodolter et al., 2022). There are also other taxes such as VAT on construction and renovation, inheritance taxes and housing-related transfers, which affect supply and demand of housing and differ across euro area Member States.

### 7.3.1 Transaction taxes

**Transaction or transfer taxes and stamp duties are an important source of fiscal revenue in many countries but have many drawbacks and adversely affect affordability.** Most euro area countries<sup>27</sup> apply a transaction tax at the time of property purchase (sometimes accompanied by a stamp duty), which is an important source of revenue though rather pro-cyclical as transaction volumes are correlated with the business cycle. The transaction tax has usually a flat rate, in some countries coupled with exemption or lower rate for first time buyers. The effective tax rate varies largely across the euro area, attaining up to 10% in Belgium. While they are often deemed to stabilise the market by reducing speculative purchases, the empirical evidence does not clearly confirm that high transaction taxes lower house price volatility and the risk of bubbles.<sup>28</sup> Macroprudential measures were found to be more suitable for this purpose (Crowe et al., 2011). Transfer taxes drive a wedge between the cost of buying a house and the price received by the seller and thereby reduce the likelihood of a mutually beneficial transaction (Barrios et al., 2019; Best and Kleven, 2020). They therefore carry a potentially significant welfare cost. Moreover, they can reduce labour mobility and thus have adverse effects on labour markets (Mirrlees, 2011). Taxation at the time of home purchase (if levied on the buyer) adds to the equity needed to access a mortgage, which may complicate access to housing especially to younger and lower income households (Causa and Pichelmann, 2020). New residential properties are usually exempt of the transfer tax but are instead subject to the value added tax (VAT), sometimes on a reduced rate.

### 7.3.2 Recurrent property taxation including land value taxation

**The economic rationale for recurrent taxes on residential property is strong with a potentially positive effect on housing affordability.** Recurrent taxes on immovable property are considered to be among the taxes least detrimental to growth (Arnold, 2008). They can capture economic rents attached to land and are a stable tax base as they are difficult to evade. They can at least partly countervail the non-taxation of imputed rents. While recurrent property taxation on an annual basis is implemented in some form in most euro area Member States,<sup>29</sup> the generated revenues are generally low, around 1.5% of GDP in the euro area. The reluctance of governments to increase revenues from such taxes comes from a variety of factors: taxes on residential property are highly visible, assessing and updating the relevant tax base is often contentious, the incidence of the tax is often unclear and, given that residential taxes are often paid to local authorities, an increase may require balancing out revenues at different government levels.<sup>30</sup> However, if recurrent taxes contribute to lower house price fluctuations, they may also improve housing affordability.

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financial investment, which is tracked by the user cost of housing indicator (UCOH). Leodolter et al. (2022) show that mortgage tax relief can significantly reduce the marginal UCOH.

<sup>27</sup> Exceptions include Cyprus, Malta, Lithuania and Slovakia (Barrios et al., 2019)

<sup>28</sup> For instance, while house price volatility has historically been relatively low in a country with high transaction taxes like Belgium, volatility has been relatively high in Japan, despite high taxes on real estate transactions.

<sup>29</sup> Exceptions include Cyprus, Estonia and Malta (Barrios et al., 2019)

<sup>30</sup> For a detailed overview of modalities of recurrent property taxation see Leodolter et al. (2022).

**The introduction of a land value tax is subject to difficulties that require careful planning and a gradual operationalisation.** In some euro area countries, land ownership is highly concentrated and used as wealth accumulation strategy, which is mostly untaxed unlike other capital gains (Murray, 2020, Paccoud et al., 2021). This has an adverse impact on housing supply, and thus also housing affordability. While the incentives attached to a land tax favour growth, the imposition of the tax introduces a windfall loss on the owners of property. For those who are highly leveraged – particularly on the expectation of gains over time – and who may be asset rich but income poor, this can be a significant change. In addition, if land taxes are used extensively, the result should be a rebalancing of property prices which needs to be considered carefully insofar as property acts as collateral to loans in the banking sector. In parallel, in order to work effectively, land taxes require reliable and up-to-date information on land values, which may not be readily available. A pure land value tax – which excludes the value of the buildings built on the land – might suffer from a lack of up-to-date land values, whereas overall property values (including values of land and of buildings) might be more readily available. This may contribute to governments choosing taxes on overall property values over land value taxes. These difficulties mean that any move towards a land value tax requires careful preparation and communication, in order to ensure a successful introduction with the least disruption to existing property owners.

### 7.3.3 Taxation of second homes

**Investment in second residences in seasonal tourist destinations has increased in recent decades amid fiscal and other (dis)incentives with an ambiguous effect on housing affordability.** Household purchases of second homes have been increasing in popularity and have at times been incentivised by a favourable local tax treatment. In some cases, loans for second homes were or are deductible as a form of long-term saving. In some cases, the interest payments can be also deducted from the taxable property income. Conversely, transaction taxes are sometimes higher and some local authorities often elevate additional taxes on second homes, including environmental levies and capital gains such as rental income from second residences are taxed. In some countries, there have been initiatives constraining or directly banning the construction of new second homes in tourist locations. While these policies serve environmental and social aims, by making some tourist destinations less attractive they can have a potentially adverse impact on prices of the primary housing market and the wages on the local labour market. However, the final impact on local housing affordability largely depends on the degree of substitutability between the primary and second homes (Hilber and Schöni, 2020) and features of the local labour market, which significantly vary across tourist destinations. Moreover, there can be incentives to tax evasion by declaring the second homes as first ones or using fictitious buyers.

### 7.3.4. Taxation of capital gains

**The taxation of capital gains relating to housing could reduce incentives to invest in housing for speculative purposes but also introduce distortions with an ambiguous effect on housing affordability.** The taxation of capital gains relating to housing applies to the accumulated increase in value at the time of sale. However, this form of taxation in the case of primary residences is used in the EU only rarely<sup>31</sup> in contrast to rather common taxation of capital gains from other assets such as stocks or investment funds. Lack of capital gains taxation related to housing supports intergenerational inequality given that real estate is commonly owned by older generations. When applied at the time of sale, capital gains tax retains some of the attractive properties of a land value tax in that it applies to the increase in value. Unlike a land value tax though, it applies – as other property-related taxes do too

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<sup>31</sup> Currently, capital gains tax on selling property is in place only in Cyprus.



– to the property overall, rather than just the land. The lack of recurrence facilitates the imposition of the tax as it does not require regular updating of values. However, similarly as the transaction taxes it may hamper residential mobility. The overall impact of capital gain taxes on housing affordability is difficult to assess given that the disincentivisation of speculations shall improve housing affordability while wedge creation between selling and buying price rather worsen it. A possible solution could be keeping the exception only for the primary residence and possibly limited to non-luxury housing or lower income households. The recurrent property taxes should be adjusted to better reflect the current property prices.

### 7.3.5 Tax incentives for home ownership

**Owner-occupied housing is subject to favourable tax treatment in many countries, which can have an adverse effect on the overall housing affordability.** While renting out a property is subject to taxation (either income or capital income tax, depending on the tax regime), the imputed rents of owner-occupied housing are usually not. This creates a clear distortion between home ownership and rental markets, favouring home ownership and driving up demand and prices. Mortgage interest tax relief reduces the tax burden on mortgage-financed owner-occupied housing and adds to the tax bias favouring home ownership. This serves to drive up asking prices<sup>32</sup> and acts as a windfall gain to the owners of property, making it particularly regressive. Mortgage-interest tax deductibility impacts directly on the incentives to take up debt, thereby contributing to creating the conditions for credit-fuelled housing booms. It can contribute to increased and more volatile house prices (Turk, 2015) and may, in fact, even reduce home ownership by crowding-out financially constrained households (Andrews and Caldera-Sanchez, 2011). Also, it has been shown to benefit households with higher incomes more than those with lower incomes and to increase income inequality.<sup>33</sup> Alternative policies involve the provision of grants or tax exemptions for first-time buyers, or vulnerable groups such as low-income individuals or single parents. Depending on the nature of the housing market, these financial aids can increase affordability for those that they are aimed at. However, they also push up demand and are at least partially a transfer to the owners of property that these favoured groups buy from. Where financial aids are aimed at a small subset of prospective buyers for a particular type of property, they may act to support affordability. However, the more widely available they are, the greater the economic deadweight cost, as they will serve to increase prices. This is for example the case of mortgage interest tax deductibility, which is almost always non-targeted, but may not be so much of an issue for a targeted relief aimed at a small subgroup of citizens.

**Mortgage interest tax deductibility has been gradually phased out in some Member States.** While several Member States use some form of mortgage interest tax deductibility,<sup>34</sup> in a number of them it was reduced (e.g. the Netherlands reduced somewhat the high level of mortgage interest rate deductibility and adjusted transaction taxes) or discontinued. In some countries severely hit by the global financial crisis, mortgage-related tax deductions were temporarily increased to prevent house price busts (e.g. Ireland). As house prices started to recover after 2013, limiting the scope of mortgage-related tax relief has been recommended by the EU institutions with the purpose of reducing the risk of new housing bubbles from appearing (ESRB, 2016; ESRB 2019).

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<sup>32</sup> Vangeel et al. (2022) document in a sample of 14 European countries that a tax relief on mortgages have a significant price-increasing effect but also that it does not hold where dual-income tax is applied.

<sup>33</sup> For a discussion of the home ownership tax bias and the impact of mortgage interest tax relief see Leodolter et al. (2022) and Leodolter (forthcoming).

<sup>34</sup> Euro area Member States which had mortgage interest relief in place in 2018 for all mortgages: Belgium, Estonia, Italy, Luxembourg, the Netherlands, and Finland. Member States where it only applied to mortgages taken up before mortgage interest relief was abolished: Ireland, Spain, France, Lithuania and Portugal. In Spain and Ireland, mortgage interest relief only applies to mortgages taken out before 2013 and in France only to mortgages taken out before 2011. In Portugal, it only applies to mortgages taken before 2012 and in Lithuania to those taken before 2009 (Leodolter et al. 2022).

**The taxation of imputed rents could reduce the distortion between owning and renting and reduce pressure on house prices.** Taxing actual rents more than imputed rents makes the ownership of a property attractive, and enables buyers to offer higher prices thus bidding them up. Introducing or increasing the recurrent taxation of imputed rents can reduce distortions while increasing tax revenues. Reducing the relative attractiveness of owner-occupied housing can shift the demand from owned to rental properties, contributing to affordability in an area. However, the imposition of such taxes needs to be handled with care: they act as a windfall loss on house owners at the point of introduction and can have a negative impact on highly leveraged households, as well as those who are asset rich but cash poor (this drawback applies even to the land value tax).

### 7.3.6 Housing-related benefits

**Housing subsidies take a diverse form and are used to support low income households. In many countries.** The existence of mortgage interest deductibility represents a significant subsidy to home owners, which are commonly higher income households. On the other hand, there has been a tendency towards less construction of public social housing (place-based programs) but more direct subsidies for low income households (tenant-based programmes). The modalities of these subsidy programmes differ substantially across countries. Differences in their design and the housing market within which they operate determine (namely, the supply and demand elasticity) the extent to which they support affordability or act as a transfer to landlords by increasing rents. Evidence from the Netherlands (Colburn, 2021) suggests that strong tenant support and favourable design of housing assistance is associated with favourable outcomes for subsidised households. On the contrary, evidence from Finland (Eerola and Lyytikäinen, 2021) suggests that housing allowances are generally not translated into lower rents.

### 7.3.7 Property taxation for the green transition

**Well-designed property taxes can also support the green transition.** As energy efficient renovation would increase the value of a property, it would also be subject to taxation based on the value. In this way, property taxation might act as a disincentive to energy efficiency investments; unless it is calibrated to exclude the gain associated with this investment. Similarly, property taxes can be designed in a way that reflects infrastructure costs and the external effects of land use. Yet, distributional effects will have to be considered when designing such reform measures, as higher-income households might for example tend to own more energy-efficient dwellings (see Leodolter et al, 2022). A land value tax would be neutral, as it would not apply to the property, just the value of the land, so it would not be incumbent on energy efficiency investments. Alternatively, existing fiscal incentives associated with property ownership could be made conditional on undertaking energy efficiency investments, possibly as a part of the move to eventually phase them out. The overall system should ideally reflect the level of energy efficiency ambition.

## 8. CONCLUSIONS

**House price growth has accelerated in the euro area since the pandemic putting significant strain on housing affordability.** As the pandemic shock has been perceived as temporary and governments implemented a series of income-supporting measures, housing demand remained strong. The housing supply, whose growth has been constrained in the last decade, was further limited by pandemic-related measures and trade disruptions causing shortages of building materials. Future price developments will be influenced by the phasing out of support measures such as payment moratoria but also by potential interest rate increases which could make the mortgage financing more

challenging. On the other hand, structural supply-side constraints are unlikely to be eased in the short-term, meaning that house price dynamics will continue to be driven by demand trends. Evolving housing preferences, arguably also due to the pandemic and potential de-urbanisation could play a more significant role in the long term. As a result of these factors, housing affordability will remain a policy concern next to financial stability risks.

**A more inflationary environment can affect housing affordability for owners with mortgages through higher interest payments.** Low interest rates in recent years have enabled borrowers to take larger loans for home purchase. However, as the economic environment is changing, financing conditions are beginning to tighten and are expected to do so further. This will increase the mortgage repayments for households with mortgages that are not fixed, putting pressure on some households' ability to repay their mortgages. At the same time, monetary policy normalisation may rebalance house prices as prospective owners will be less able to afford high prices. The resulting lower demand would decrease the value of current owners' properties and, in turn, reduce the households' wealth.

**Housing affordability is affected by diverse policies that often have other objectives.** Challenges related to housing affordability result from structural factors (availability of land), market inefficiencies and imperfect regulations. A better understanding of housing-related issues from the country-wide and regional perspective should improve the effectiveness of policy implementation. In addition, the interaction of policies addressing macro-financial stability, housing affordability and climate goals can have different repercussions on house demand and supply.

**Housing policies need to be well calibrated at national level.** The application of an appropriate housing policy at the national level is challenging, as different policies interact and affect both the supply and the demand side. While many structural policies that affect the ability to build are in the hands of regional or local actors, the overall impact of these is national. This is particularly driven by the affordability pressures that are present in high productivity regions, which can affect aggregate growth through their impact on how productivity evolves in different areas.

**Demand-side policies often worsen housing affordability unless accompanied by an expansion of housing supply.** Policy makers tend to favour policies that support housing demand rather than policies that incentivise housing supply. This often results in price increases and a deterioration, rather than an improvement, of housing affordability. The staggered supply response is often the outcome of previous policy decisions and unresolved structural problems such as stringent zoning regulations, long approval processes for new constructions, rigid or undeveloped rental markets or insufficient investment in social housing. On the demand side, features of the property tax system, such as mortgage interest tax deductibility or outdated cadastral values often support home ownership<sup>35</sup> and increase household indebtedness. In order to address the overall housing affordability, effective supply side measures are a better remedy, although demand side measures may have a role if more targeted at vulnerable groups.

**Increasing supply does not only imply building new dwellings but also other measures can be highly effective or even necessary.** The conversion of retail or business properties into residential buildings could be prioritised in locations, which have experienced a preference shift (often further accelerated by the pandemic). Investing in fast and effective green transport solutions can in turn make access to more locations attractive to households, easing the pressure on urban housing. Addressing the mismatch between housing needs and the actual size of properties, resulting from large dwellings being occupied by small elderly family units due to demographic change, could also offer venues for easing pressure. However, such as move could bring high non-monetary costs to the elderly resulting from leaving their neighbourhood and cutting social ties.

**The appropriation of economic rent by home owners leads to suboptimal economic outcomes and raises affordability concerns.** Measures to reduce the ability of home owners to extract this rent

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<sup>35</sup> Mortgage tax deductibility always support existing home owners by increasing their disposable income. It may increase also new home ownership if the housing supply is sufficiently elastic.

could be part of a durable solution to house price inflation and housing affordability and could provide much needed funds for the state while increasing economic efficiency. In order to tax rents, land value taxes, recurrent property taxes, and capital gains taxes could be adapted and extended, while short-term decreases in property values that might be able to result from such measures would need to be avoided. In addition, housing provision by the state could address housing scarcity and potential housing value gains would accrue to the society as a whole.

**The political economy of housing policy makes finding a balanced solution more challenging.** Home owners constitute a pressure group that aims at protecting the economic rents that accrue to them from the property ownership and they are able to organise effective political resistance to policies that hurt their economic interests. Conversely, those that stand to benefit from policies that aim to limit house prices increases are often more diverse and their benefit is indirect. Moreover, the longer-term impact of policies that subsidise costs is also not direct and is therefore politically less visible than the immediate attractiveness of subsidies. In summary, this makes it difficult for policy makers to prioritise and drive positive changes, despite the very real and growing economic costs of increasing house prices and pressure on housing affordability.

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## ANNEX 1: CONCEPTS AND MEASURES OF HOUSING AFFORDABILITY

Housing affordability expresses the relationship between a household's income and its housing costs both in terms of purchasing and renting. Most methods for measuring housing affordability aim at house purchase given the focus on households with a median income, which should be able to own its housing. However, renting shall be deemed as an evenly valid option not only for lower income households, where the housing unaffordability can have significant social consequences, but also for median households, as elevated levels of home ownership financed by mortgage credit can represent also risk for financial stability. The need to strengthen the focus on rental affordability can be justified also by changes in household composition with an increasing share of single-person households that may have higher preferences (compared to couples or families with children) for renting.

There are two basic methods to measure housing affordability: I. ratio income approach and II. residual income approach. While the ratio income approach has been a traditional way to measure affordability, the residual income approach increased its prominence over the last decade. However, as both methods suffer shortcomings, they can be combined or further augmented, e.g. by III. subjective indicators based on perceptions.

I. **The price-to-income (PTI) ratio and rent-to-income (RTI) ratio** have been the most common indicator to track housing affordability across time. The PTI ratio compares changes in the house price index to that of households' gross disposable income per capita. A persistent rise of this ratio can result in houses becoming increasingly unaffordable, creating a mismatch between the supply of housing and the demand for it. Therefore, a significant increase in the PTI ratio also indicates risks of corrections in housing prices, which could potentially improve housing affordability but pose risk for financial stability as houses are used as collateral for mortgage credit. The rent-to-income (RTI) ratio provides a similar picture in the case of renting.

The main caveat of the ratio approach is the identification of equilibrium and the cross-country comparability. The equilibrium value is mostly proxied by the average for each country. However, many countries do not have sufficiently long-time series to obtain meaningful time averages. Moreover, a single equilibrium is not assured at country level, and thus even a long-term average may not be a good proxy of equilibrium value. The cross-country comparability is limited both by the varying availability of data across countries but also by the fact that PTI ratio is an index.

While choices on the type of house price and income have implications for the value of PTI / RTI ratios, differences in quality of housing further limit its comparability. While the average (purchase or rental) price is commonly used as numerator (as full distribution of prices is often available), the median income rather than the average income is employed as denominator to cushion for potential inequality of income distribution. However, for some countries (and even regions within countries) the house price distribution may be very unequal. Likewise, the income distribution can be skewed and not well tracked by the median income. An additional problem is that neither PTI nor RTI ratios control for potential variation in quality of housing stocks across time but also across space (regions, countries). Namely, quality of housing is arguably improving over time and housing may be of better quality in countries with higher standards of living, thus higher income ratios may not be always be an indication of lower affordability (Kutty, 2005).

The PTI approach can be improved by considering also the financing conditions. As most house purchases are financed by mortgage credit, it is important to distinguish between **purchase affordability** (i.e. the ability of households to obtain the funds necessary at the time of house purchase) and **repayment affordability** (the overall burden of repaying the mortgage). This approach can be extended to consider the whole distribution of household income and house prices rather than just the median (Gan and Hill, 2009). The difference between purchase affordability and repayment

affordability can be driven by changes in credit constraints. Namely, loose credit constraints can improve the purchase affordability but can feed also to higher housing prices, which in turn hampers the repayment affordability.<sup>36</sup> Similarly, **the household's ability to pay** (ATP) assumes financing of house purchase via mortgage credit incorporates the impact of developments of long-term interest rates, changes in mortgage interest deductibility and financial innovations (see e.g. Damen et al. 2016). Other measures include simple **mortgage-to-income ratio** (MIR) or **debt-service-to-income ratio** (DSTI), which are often used alongside prudential thresholds. For example, the common DSTI limit for macroprudential purposes is 40-50%.<sup>37</sup>

PTI ratios form the conceptual basis for the calculation of so called overburden rates. **The overburden rate** is defined by Eurostat as the percentage of households whose PTI is above 40%, where the household's PTI is obtained as the ratio of total housing costs to disposable income. The overburden rates can be calculated using EU-SILC, which is across countries and thus allows cross-country comparisons (Dewilde, 2015). In practice, the overburden rates appear to be very stable over time and additionally do not seem very much related to the households' perceived housing burden, which is also part of EU-SILC. These overburden rates are frequently used in the country reports to assess the affordability of housing. This can be related to differences in access to and the social production of housing. An alternative explanation is that the same burden rates are simply very different depending on the overall income level.

**II. The residual income approach**, which evaluates housing affordability in terms of household ability to cover the housing cost after meeting basic needs (Thalmann, 2003, Stone, 2006), gained popularity as an alternative to income ratios. Unlike the PTI ratio, that typically aims at the median household, this approach aims at the lower tail of the income distribution. It uses the difference between income and housing cost rather than their ratio. Namely, it calculated the income left for non-housing expenditure after covering the housing cost, i.e. either mortgage payments or rents, taking into account differences across households. This measure is closely linked to the definition of the poverty line and is often applied in a normative way.<sup>38</sup> The main caveat of this approach is its complexity and potential arbitrariness as requested housing costs and residual income need to be evaluated for different types of households. Moreover, this measure should be rather understood as a measure of poverty that is ill-suited for application at a macro level, i.e. in a multi-country context and across time.

**The overcrowding rate** is another indicator indirectly tracking the housing affordability and quality of housing. The overcrowding rate is understood<sup>39</sup> as a percentage of the population living in an overcrowded household, which is, in turn, defined by the minimum number of rooms per individual person, couple, children etc.<sup>40</sup> Overcrowding can be seen both as a consequence of shortage of affordable housing and as a proxy of housing quality that is however difficult to measure objectively

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<sup>36</sup> Alternatively, Abeysinghe and Gu (2011) distinguish between long-term and short-term affordability suggesting that "Households with long-term affordability problems are those who, in their lifetime, are unlikely to have sufficient income to pay for a house. Short-term affordability problems concern households who may have lifetime incomes sufficient for a house purchase, but face short-term restrictions in financing it."

<sup>37</sup> For the US, frequently used indicator is the affordability index provided by the National Association of Realtors, which measures the relationship between the borrowing capacity of a median household and the price of a median-priced home, assuming a 20% down payment. This indicator shows the relevance of the financing conditions for affordability, since nominal interest rates directly enter the calculus.

<sup>38</sup> The 'housing-induced poverty' (Kutty, 2005) implies housing policy in terms of subsidy to households that are unable to cover non-housing needs after paying for housing.

<sup>39</sup> <https://ec.europa.eu/social/main.jsp?catId=818&langId=en&id=62>

<sup>40</sup> The minimum requirement is one room for the household; one room per couple in the household; one room for each single person aged 18 or more; one room per pair of single people of the same gender between 12 and 17 years of age; one room for each single person between 12 and 17 years of age and not included in the previous category; one room per pair of children under 12 years of age.

in a cross-country context. Overcrowding is one of the components of housing deprivation, which is related to housing quality though at the lowest part of its distribution. The measure of overcrowding seems to be affected both by the overall standards of living but also by demographic and family structures across the countries.

**III. Indicators of housing affordability based on subjective perception** can be used as a complement to objective indicators. While all of the indicators above can be deemed as objective, they have also their subjective counterparts, which are based on self-reporting. For example, the EU-SILC survey includes a question on subjective evaluation of financial burden related to the housing cost. As subjective perception is reported for households rather than for individuals, the household becomes the unit of analysis, which is consistent with the fact that housing burden is commonly shared by members of the same households (Sunega and Lux, 2016). The objective and subjective measures show striking differences even in international comparisons.

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