THE HOUSING MARKET IN SPAIN: 2014-2019

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Directorate General Economics, Statistics and Research

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Abstract

This paper describes the main features of the Spanish housing market during the latest expansionary period (2014-2019), and discusses two aspects relating to its recent situation. First, it analyses the evidence of households' possible housing affordability difficulties. It finds that these difficulties have been exacerbated in recent years, especially for specific groups such as the young and low-income households, and particularly in certain zones, such as the major metropolitan areas. Next, it reviews the ensuing consequences from the standpoint of economic efficiency and of social challenges, analysing potential public measures that might be considered to alleviate these difficulties. Finally, it assesses the potential systemic risks associated with the residential real estate market, concluding that these were, at end-2019, more limited than those prevalent in the run-up to the financial crisis that broke in 2008.

Keywords: housing market, mortgage market, housing affordability, systemic risks, public intervention.

JEL classification: R30, R31, R38, G21, G51.

Resumen

En este trabajo se describen los principales rasgos de la evolución del mercado de la vivienda en España durante el último período de expansión (2014-2019) y se discuten dos aspectos relacionados con su situación reciente. Por una parte, se analiza la evidencia acerca de las posibles dificultades de acceso de los hogares a la vivienda, encontrando que estas se habrían agravado durante los últimos años, especialmente para determinados colectivos, como los jóvenes y las familias con rentas bajas, sobre todo en algunas zonas, como las grandes áreas metropolitanas. Seguidamente se revisan las implicaciones que de ello se derivan desde el punto de vista de la eficiencia económica y de los retos sociales y se analizan medidas públicas que podrían considerarse para aliviar estas dificultades. La última sección ofrece una valoración de los posibles riesgos sistémicos asociados al mercado inmobiliario residencial, y se concluye que estos eran, a finales de 2019, más limitados que los que había en los años anteriores a la crisis financiera iniciada en 2008.

Palabras clave: mercado de la vivienda, mercado hipotecario, accesibilidad a la vivienda, riesgos sistémicos, intervención pública.

Códigos JEL: R30, R31, R38, G21, G51.

Contents

1 Introduction

The housing market has an important economic and social function. First, conditions in this market, along with those in the labour and credit markets, largely determine the affordability of housing for different households. Second, the activity of this sector makes up an important part of the economy; employment in construction and property-related investment are both very significant. Partly for this reason, and also because a high proportion of housing transactions are debt financed, the functioning of the property market may have implications for financial stability. Indeed, property crises have often been associated with severe banking crises, like the one in Spain between 2008 and 2013. These considerations call for rigorous in-depth analysis of the implications that the situation in this market may have for the economy as a whole and the financial system. Hence, the Banco de España is currently developing various analytical tools and early-warning indicators for this market.

After summarising the most notable features of the residential property market in Spain during the latest expansionary period that began in 2014, this paper analyses two aspects of the situation as at the end of 2019. First, it investigates possible housing affordability difficulties for Spanish households, and finds that these have been exacerbated in recent years, especially among specific groups, such as the young and low-income households, and particularly in certain zones, such as the major metropolitan areas. It then goes on to review the economic and social implications of obstacles to housing affordability and to analyse possible public measures to ease these difficulties. The last section offers an assessment of the possible systemic risks associated with the property market situation.

The substantial macroeconomic impact of the COVID-19 health crisis may exacerbate both housing affordability difficulties and property market-related risks. However, given the absence of data due to the proximity of this episode, these aspects are not analysed here. In any event, as soon as data becomes available, the Banco de España will address these issues in its regular monitoring of macro-financial developments.

2 Main characteristics of the recent upturn in the housing market

2.1 New housing starts recovered after the financial crisis, but the 2019 levels were low from a historical perspective

Following the significant correction during the crisis that broke in 2008, from early 2014 real estate supply-side indicators began to recover sharply. Households' housing investment rose by 47% in real terms between 2013 and 2019. This rate of growth was higher than that of other investment components, such as intangible assets (23%) or capital goods (31%). It was also higher than the rate of growth of GDP (17%) in the same period. Other supply-side indicators, such as new housing starts or construction sector employment, have also been expansionary in recent years.

However, since mid-2018, the growth in real estate supply has moderated. This is compatible with the slowdown in the Spanish economy and the deterioration of the medium-term economic outlook, against a background of heightened uncertainty at both the national and, especially, the international level. Thus, the number of building permits increased by 5% in 2019, notably down on the 25% rise a year earlier.

Despite the strong growth since early 2014, the supply-side levels were relatively low in 2019 from a historical perspective, although in line with those observed in the euro area overall. Chart 1.1 shows that, as a proportion of GDP, residential investment in 2019 was around the minimum levels observed in the first half of the 1990s (5.7%). This is close to the euro area average and very distant from the exceptional figures observed in the real estate boom that preceded the last crisis (11.4% in 2007). Employment momentum in the construction sector reflects a similar pattern: the sector employed 1.3 million workers in 2019, approximately half the total employed in 2007 and in line with the average for the period 19901995 (see Chart 1.2). In turn, new housing starts, proxied by building permits, at just over 100,000 housing units per year in 2019, were at their lowest level since 1990, with the exception of the years of the financial crisis that began in 2008.

A key determinant of the low levels of supply in the real estate sector compared with other previous expansionary cycles is the low rate of growth of the population in recent years. Between 2014 and 2019 Spain's resident population increased, on average, at a rate of 0.15% per annum, compared with 1% per annum during the upturn between 1994 and 2007 (see Chart 2.1). In terms of household formation – the variable that best proxies housing demand – the differences are also pronounced: increases verging on 0.5% in annual average terms in the period 20142019 (64,000 households per year), compared with an average increase of more than 2% in the previous expansionary phase.

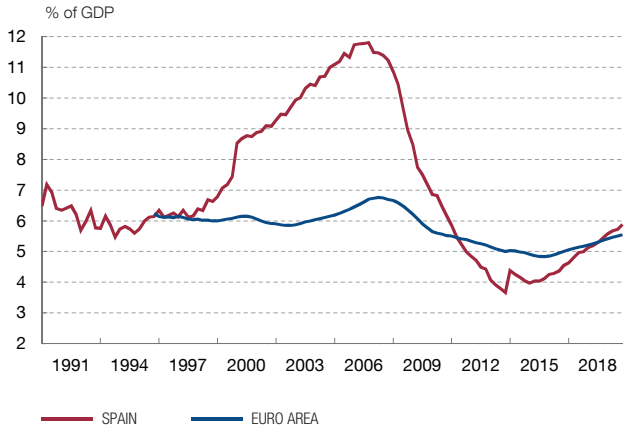
Another conditioning factor behind the low levels of new supply is the high unsold housing stock that built up during the last crisis. Since 2013, demand levels (housing transactions, according to new housing sales recorded before notary) have continuously exceeded new supply levels (completed housing, measured by completion certificates). As a

Chart 1

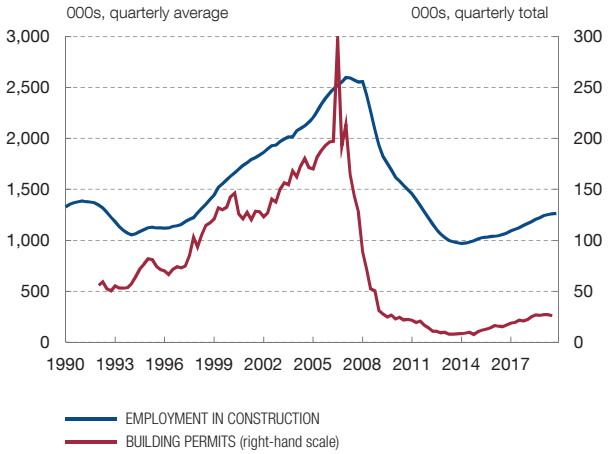
REAL ESTATE MARKET ACTIVITY IS RECOVERING, BUT AT END-2019 IT WAS STILL AT HISTORICALLY LOW LEVELS

In keeping with the economic recovery, real estate market activity has risen since 2014. Thus, investment in housing has increased gradually, up to 5.7% of GDP in 2019, close to the euro area average. Yet these current levels are still low from a historical standpoint.

1 INVESTMENT IN HOUSING



2 SOCIAL SECURITY REGISTRATIONS AND BUILDING PERMITS



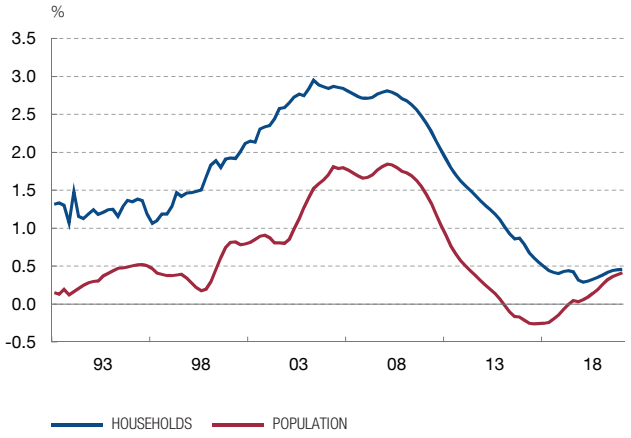
SOURCES: Banco de España, Eurostat, INE, Ministerio de Trabajo, Migraciones y Seguridad Social and Ministerio de Transportes, Movilidad y Agenda Urbana.

Chart 2

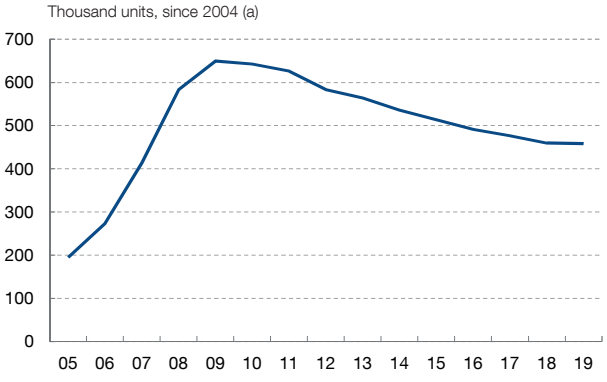
WEAK DEMOGRAPHIC GROWTH AND THE HIGH UNSOLD HOUSING STOCK LIMIT SUPPLY-SIDE GROWTH

The low annual rate of population growth and household growth limit the rate of recovery of new housing supply. In addition, although the unsold new housing stock has gradually declined since the real estate crisis, it is still relatively high.

1 DEMOGRAPHIC FACTORS
Average annual change in last three years



2 UNSOLD NEW HOUSING STOCK



SOURCES: INE and Ministerio de Transportes, Movilidad y Agenda Urbana.

a The unsold new housing stock in 2019 is obtained from cumulative data on completion certificates minus new housing sales up to September 2019, adjusted for self-builds, cooperatives and home-owners' associations.

result, the volume of unsold new housing began to be gradually absorbed and amounted to approximately 460,000 units at end-2019, although this estimation is subject to a potentially high margin of error (see Chart 2.2).

2.2 House prices and transactions have also risen significantly in recent years

In tandem with the supply-side recovery in the real estate market following the severe adjustment during the crisis, in recent years house prices have showed sustained upward growth. From the low recorded in 2014 Q1, average prices at the national level showed cumulative growth of 32% in nominal terms (26% in real terms) in 2019 Q4 (see Chart 3.1). At that point, house prices were 17% below their all-time high recorded in 2007 Q3 (30% lower in real terms).

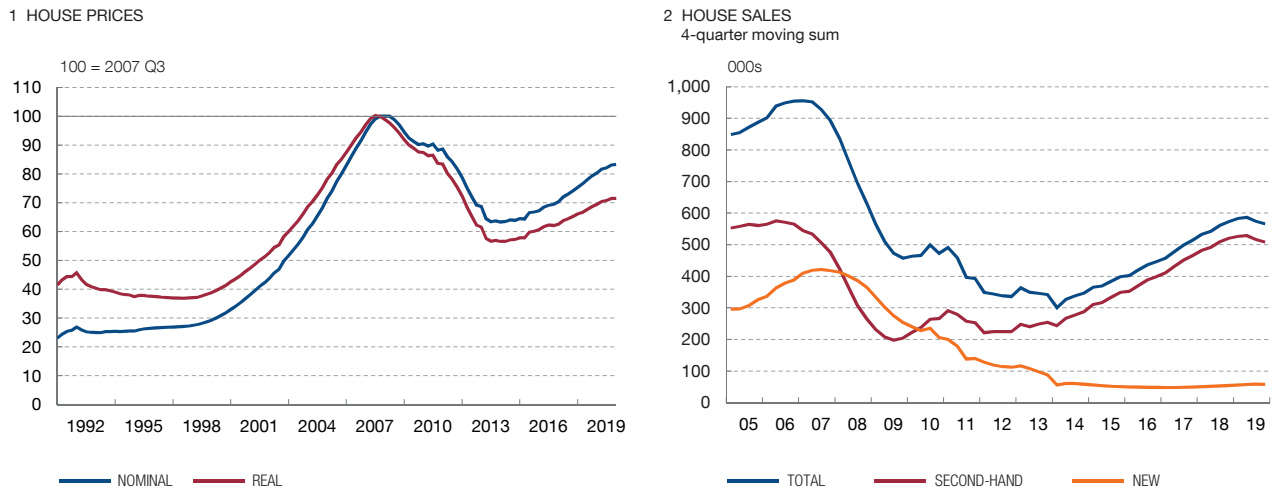
Housing transactions have also risen significantly in recent years. The recovery in the last upturn was largely sustained by the second-hand housing segment, in line with the low level of new housing starts. Thus, at end-2019, annual volume in this segment (around 80% of total transactions) stood at similar levels to the highs recorded in 2007 (see Chart 3.2).

The share of property purchased by foreign buyers has increased significantly. Between 2007 and 2013 these purchases rose from 7% to 19% of the total and have remained relatively steady since (see Chart 4.1). Approximately half of these purchases are made by non-residents in Spain, most of whom resident in other European Union countries. Property purchases by foreign buyers in Spain are concentrated in the islands and in the provinces along the Mediterranean coast (see Chart 4.2). In net terms (purchases

Chart 3

HOUSE PRICES AND TRANSACTIONS HAVE RISEN SINCE 2014

House prices have risen 31% in nominal terms since 2014. At end-2019 they were 17% below the highs recorded in 2007, with a slowdown observed in recent quarters. The number of house sales also rose up to 2018, essentially in the second-hand housing segment, while in 2019 they fell back slightly.



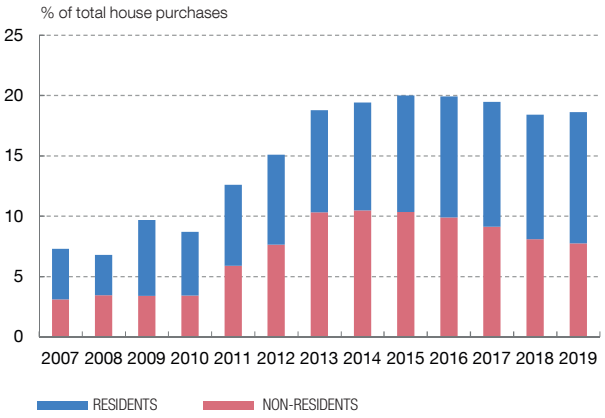
SOURCES: INE and Ministerio de Transportes, Movilidad y Agenda Urbana.

Chart 4

FOREIGN BUYERS ACCOUNT FOR ALMOST 20% OF PURCHASES ON THE SPANISH RESIDENTIAL REAL ESTATE MARKET

Between 2007 and 2013 the share of housing purchased by foreign buyers rose from 7% to 19% of the total, and has held relatively steady since. In the economic recovery period, on average almost half of all these purchases were made by non-residents in Spain, concentrated mainly along the Mediterranean coast and in the islands.

1 HOUSE PURCHASES BY FOREIGN BUYERS ON SPANISH REAL ESTATE MARKET



2 HOUSE PURCHASES BY FOREIGN BUYERS IN CUMULATIVE TERMS IN 2014-2019

SOURCES: General Council of Notaries and Banco de España.

minus sales), purchases in the last upturn were especially significant, accounting for 1.2% of the average national housing stock in that period, more than double the figure recorded in the economic downturn between 2008 and 2013.[1,2]

As in the case of the supply-side indicators, the rate of growth of prices and transactions has also moderated since mid-2018. The deceleration has been especially marked in the case of house purchases, which even fell (by 3%) in 2019, after climbing by 7% in 2018. The severity of this deceleration may be explained, in part, by the process of adaptation to the new real estate credit market legislation which came into force in June 2019 and slowed down transactions during the first months of its application. The new regulations introduced important improvements in terms of consumer protection and enhanced legal certainty, which should allow for better functioning of the market in the medium and long term.[3]

2.3 Rental market: sustained increase in prices as a result of the sharp surge in demand

Rental market prices have also risen significantly in recent years, at an even faster pace than house prices. Although there are no official rental housing prices, the information provided

1 For more details, see Álvarez, Blanco and García-Posada (2020).

2 According to the latest census (2011), in terms of housing stock, 7% of owner-occupied housing had at least one household member who was not a Spanish national.

3 The Law regulating real estate credit agreements, which transposes Directive 2014/17/EU into Spanish law, regulates the customer protection scheme and establishes the transparency and conduct rules in credit agreements for purchase of residential immovable property. The entry into force of this law prompted a slowdown in activity owing to the need to adapt to the new administrative framework (see Banco de España (2019a)).

by real estate internet portals reflects a sharp increase in supply-side prices since the start of the economic recovery in 2014 (see Chart 5.1). These price rises are higher in the large metropolitan areas such as Madrid or Barcelona. Although the figures should be taken as a mere approximation of price movements, as they are based not on transactions but on supply, other alternative sources, such as those based on rent deposits, also point in the same direction.

These price developments in the rental market are largely in response to the sharp surge in demand, especially among young people (see Figure 1). The Spanish Survey of Household Finances (EFF, by its Spanish abbreviation) shows a marked increase in renting among households whose head is under 35 years of age, from 24% in 2011 to 43% in 2017 (the last year for which figures are available; see Chart 5.2). Among households whose head is between 35 and 44 years of age the figure has also increased, albeit more moderately. This pattern reflects a certain degree of convergence towards the core euro area countries, such as Germany and France, where the percentage of home ownership has traditionally been much lower than in Spain, especially among younger households (see Chart 5.3). In the same vein, the EFF shows a gradual increase in renting households among those who have been in their home for less than three years, up to more than 60% in 2017, which is 20 pp (percentage points) above the 2002 figure.

The higher demand for rental housing among young people is in response to various factors relating to changes arising following the crisis that began in 2008, both in the labour and the credit market, and also in taxation on housing. To start with the labour market, on data from the Spanish Labour Force Survey (EPA, by its Spanish abbreviation), average wages for young people in 2018 (the latest year for which data are available) had still not returned to their 2008 level. Thus, in 2018 average wages for workers aged 20 to 24 were 8.3% lower than in 2008, in nominal terms. This difference was somewhat smaller in the case of workers aged 25 to 29 (5.1%), while those aged 30 to 34 received slightly higher wages than the 2008 equivalent (1.3%). Other employment conditions also deteriorated more sharply among young workers. In 2019, the unemployment rate of the labour force aged 16 to 29 was 25%, the incidence of long-term unemployment was 33% and the part-time employment ratio was close to 26%, 10 pp above the pre-crisis figures (see Chart 5.4). This labour market situation has made it difficult for young people to consider buying a home, as it limits both their ability to save and their access to borrowing. In addition, the uncertainty associated with this situation (temporary contracts, high unemployment) may also have discouraged young people from investing in real estate assets, with many of them preferring to rent rather than purchase their homes.

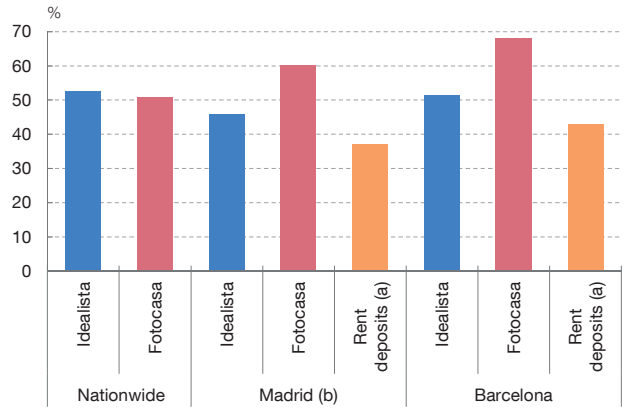
There is also evidence to suggest that following the crisis that broke in 2008, deposit institutions have applied more prudent credit conditions and standards. The information available shows that, post crisis, the median percentage of the value of real estate purchases that is credit financed has decreased (approximated by the loan-to-price (LTP) ratio, which is down from around 100% to 80%), the average mortgage term has become shorter and the average loan-to-income (LTI) ratio of borrowers has fallen (see Chart 5.5). Although these changes may partly be in response to demand-side factors (such as fewer loan applications

Chart 5

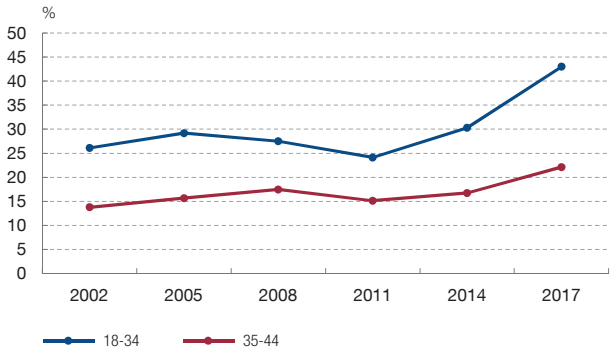
INCREASE IN RENTAL PRICES DRIVEN BY SHARP SURGE IN DEMAND

Rental prices have risen significantly in recent years, in response to strong demand, especially among young people. This higher demand is explained by the deterioration in their labour market conditions and by the stricter conditions imposed by financial institutions which have lowered their maximum LTP ratios.

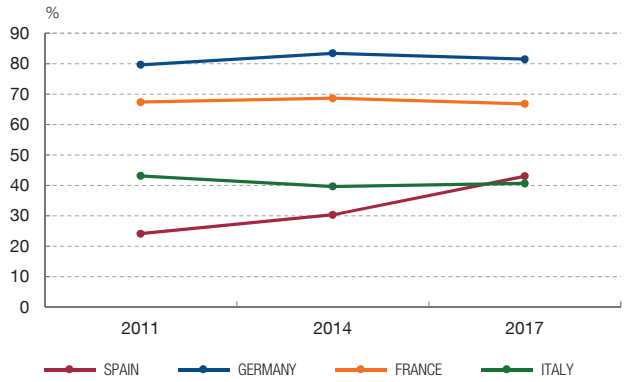
1 RENTAL PRICES AT NATIONAL AND MUNICIPAL LEVEL
Cumulative change from 2013-2014 low to 2019



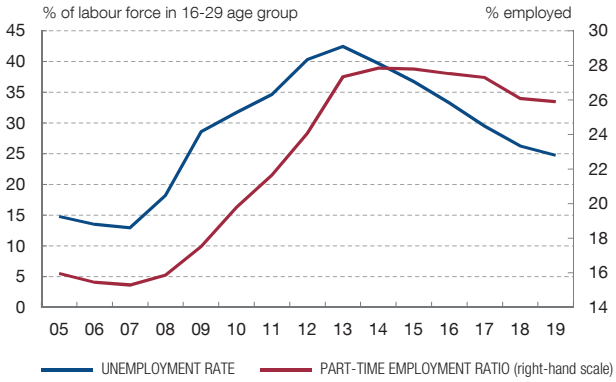
2 PROPORTION OF RENTING HOUSEHOLDS, BY AGE GROUP



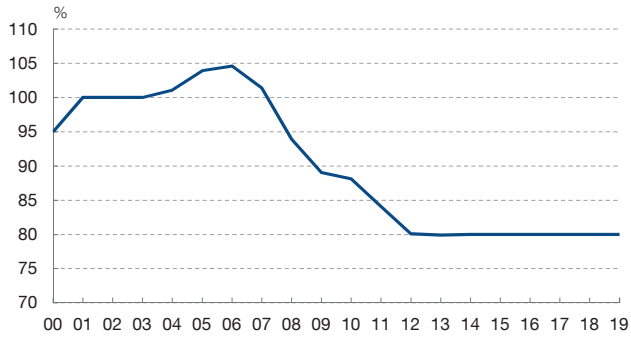
3 PROPORTION OF RENTING HOUSEHOLDS AGED 18-34, BY COUNTRY



4 LABOUR MARKET, 16-29 AGE GROUP



5 MEDIAN LOAN-TO-PRICE (LTP) RATIO (c)



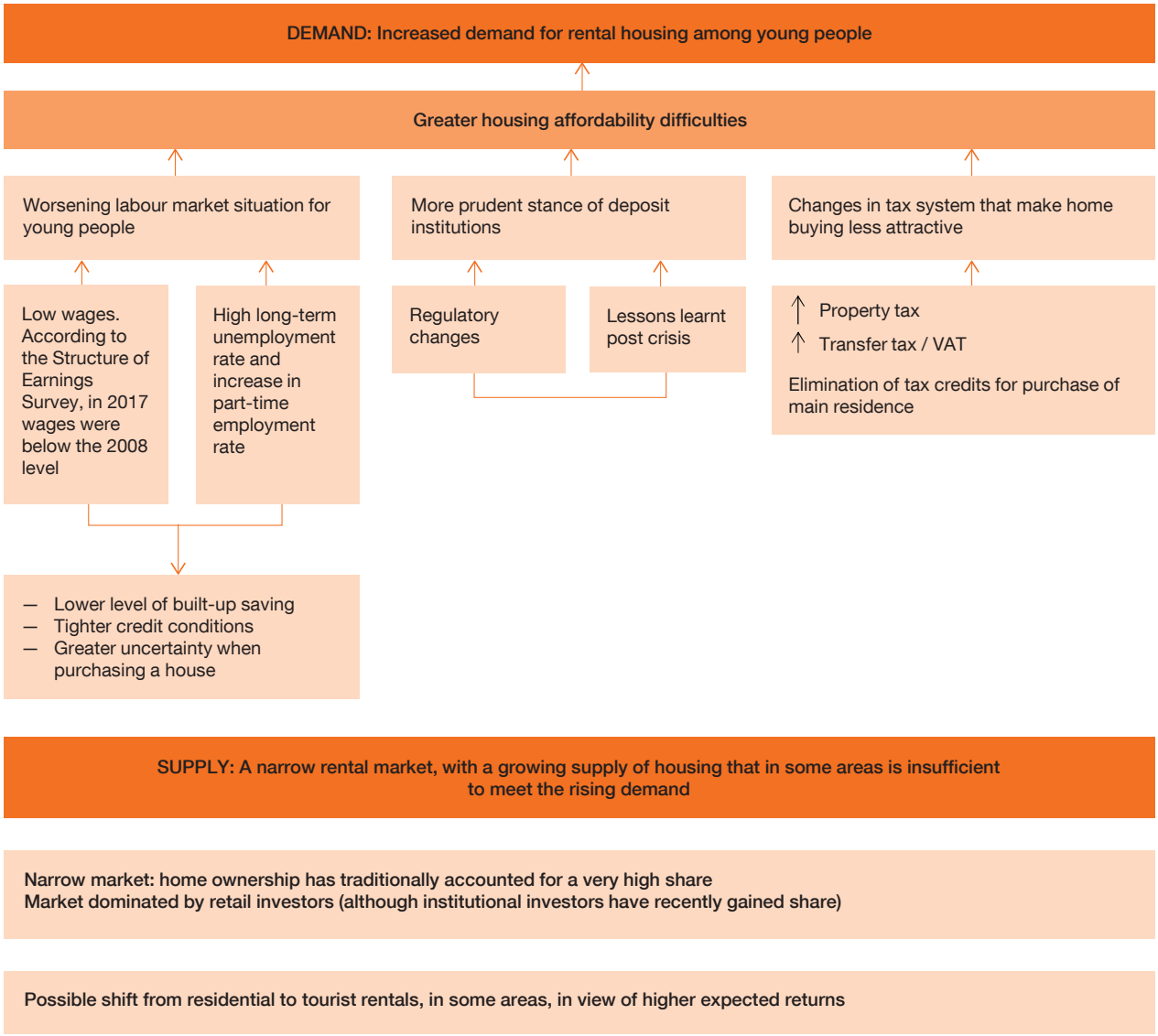
6 MORTGAGE RATE SPREAD OVER SWAP CURVE (d)

SOURCES: Banco de España, Colegio de Registradores, EFF, Fotocasa, HFCS, Idealista, INE, Ministerio de Transportes, Movilidad y Agenda Urbana and Refinitiv.

a The rent deposit series reflects information on rents drawing on administrative data on rent deposits recorded by the regional governments.
b The rent deposit series for Madrid shows the annual change at the provincial level between 2014 and 2018.
c Mortgage data up to September 2019, incomplete for the period 2000-2003. Purchase price according to Association of Registrars.
d Taking the euro IRS curve as the risk-free rate. All pre-2013 mortgages are assumed to be variable rate.

Figure 1

EXPLANATORY FACTORS FOR INCREASE IN RENTAL HOUSING PRICES



SOURCE: Banco de España.

from young people, as a reflection, for example, of labour market uncertainty), all the above suggests that these developments may also be explained by a more prudent stance on the part of banks. Thus, for example, the findings in Box 1 show that the municipalities where the LTP ratio fell the most between 2008 and 2012 also recorded the highest increase in the rate of rejection of credit applications. Similarly, Chart 5.6 shows that in recent years the mortgage interest rate spread over market interest rates has been much wider than the narrow margins observed in the pre-crisis years.

This more prudent approach by deposit institutions is a consequence both of the regulatory changes introduced post-crisis at the national and international level and of

the experience built up by credit institutions after the financial crisis. In particular, there is evidence that during the crisis defaults were higher among mortgages with looser conditions (longer mortgage terms and higher LTI and LTP ratios).[4] The overly loose credit conditions that prevailed in the run-up to the crisis that broke in 2008 were one of the reasons why the crisis had such a severe impact on the Spanish economy and its financial system.

Overall, the changes to taxation on housing introduced after the financial crisis made renting more attractive than home buying. Thus, the tax credit for purchase of main residence was finally eliminated from 1 January 2013. In addition, taxes on both home-ownership and house purchases were raised: specifically, in the first case, property tax (IBI, by its Spanish abbreviation); and in the second, transfer tax (ITP, by its Spanish abbreviation) in some regions of Spain and VAT nationwide. These changes reduced the tax bias favouring home buying over renting that had prevailed during the expansionary cycle previous to the financial crisis. Tax relief on rental income for landlords has also been reduced in some cases in recent years.[5]

According to the simulations presented in Box 2, the first two of the three factors described above, i.e. the more prudent approach of deposit institutions and the effects of the labour market situation, best explain the recent changes in housing tenure among young people. By contrast, the impact of the reform of taxation on housing is comparatively low.

In addition to the sharp increase in rental demand by young people, the surge in rental market prices has also been driven by certain supply-side factors. First, the Spanish rental market is relatively small, in a setting in which the share of home-ownership has traditionally been very high in comparison with other European countries. The Spanish rental market is dominated by retail investors.[6] However, in recent years, the share of institutional investors, including listed real estate investment companies (SOCIMIs[7] by their Spanish acronym) and specialised investment funds, has increased. This presents certain advantages, as it enhances both the professional nature of the renting business and the efficiency of retail investor portfolios, allowing them to opt for greater risk diversification by means of property investment through these vehicles rather than through the direct acquisition of real estate assets.

Second, technological progress and widespread internet use have led to the emergence of digital platforms that have opened up the traditional tourist apartment market to other dwellings that were being used for residential purposes or were empty. The information available on the share of tourist rentals shows a high level of heterogeneity.

4 For more details, see Galán and Lamas (2019).

5 Specifically, there is an exemption in place for rental income, set in 2003 at 50% of property income from rentals of main residence. It currently stands at 60%. In the period 2007-2014 the exemption was 100% if the rental was for young people whose income was below a certain benchmark level. In any event, this income is taxed at the marginal rate and not at the rate on savings, which is lower.

6 Although to date there are no statistics that adequately reflect the type of owner of rented housing in Spain, the 2018 Living Conditions Survey (ECV, by its Spanish abbreviation) indicates that 77.4% of homes rented other than for work purposes have been rented from another household, 11.1% from the general government and 11.2% from other owners.

7 For a detailed analysis of recent development in SOCIMIs, see García-Vaquero and Roibás (2020).

Thus, in cities such as Barcelona or Madrid, they account for between 5% and 10% of all rented accommodation, concentrated in central districts that are highly attractive to tourists. This percentage rises to more than 15% in other municipalities with a smaller population and higher tourist density, such as Malaga, Seville or Mallorca; by contrast, in other areas of Spain it is lower. The expansion of this activity is explained by the higher returns expected from tourist rentals compared with residential rentals.

There is still little evidence of the shift from residential rentals to tourist rentals and of its impact on real estate prices at the national and international level. The academic studies available suggest that the scale of these effects depends on the density of holiday rentals in the city in question and on residential rental demand.[8] In the case of Spain, in a study on the impact of tourist rentals in the city of Barcelona,[9] it was found that these rentals had a positive effect on average rental income from registered rentals, on second-hand housing transaction prices and on asking prices for house sales in districts with a high concentration of activity of holiday rental platforms.

Apart from the short-term impact of the increase in renting on market prices, this development may also have certain medium and long-term effects. Thus, renting boosts workers' mobility, making them better placed to respond to idiosyncratic shocks affecting a specific geographical area. Also, insofar as housing expenditure is compatible with building up savings, renting will, in theory, allow households to save in the form of financial assets, which offer higher liquidity and greater risk diversification than savings in the form of their main residence. However, the available evidence suggests that not all households would be able to participate in this portfolio rebuilding, which may lead to higher wealth inequality.[10]

2.4 A recovery with scant recourse to credit

Contrary to the situation during the real estate boom that preceded the crisis that began in 2008, the recent growth period in the real estate market has been characterised by a low level of borrowing. Following the sharp decline during the financial crisis, since 2013 new lending for house purchase has been gradually recovering, although it is still very distant from the levels observed pre-crisis. Specifically, the volume of new lending in 2019 stood at €42 billion, which is less than half the amount recorded at the start of the century and less than a quarter of the high recorded in 2007 (see Chart 6.1). Indeed, new lending granted in recent years has been lower than repayments of outstanding mortgage debt, so the outstanding balance of mortgage credit has continued to decline, down to 42% of GDP at end-2019, 22 pp below

8 Horn and Merante (2017) find that holiday rentals have a modest impact on asking rents in Boston. In an analysis of the metropolitan area of Los Angeles, Koster, Van Ommeren and Volhausen (2018) show a higher impact of holiday rentals, both on the decline in the supply of rental properties and on real estate prices, concentrated in the areas with a higher density of tourist rentals.

9 See García-López, Jofre-Monseny, Martínez Mazza and Segú (2019).

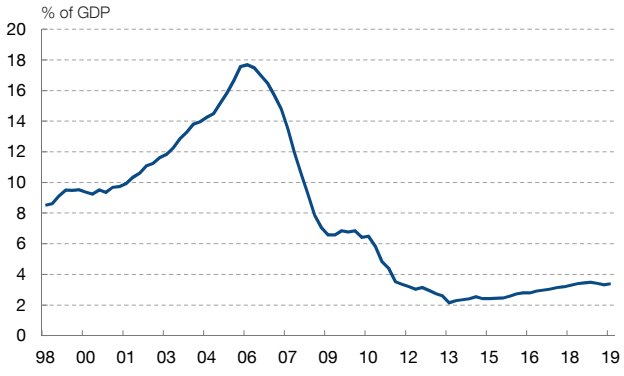
10 Kaas and others (2019) empirically document that the European countries with a higher rate of home-ownership have greater wealth inequality. Paz-Pardo (2020) constructs a life-cycle model calibrated for the United States, where the absence of steady income and the cost of borrowing explain both the decline in the rate of home-ownership and the increase in wealth inequality. In Spain, there are no signs of an increase in the median volume of financial wealth among generations whose rate of home-ownership is lower [see Banco de España (2019b) and Barceló et al. (2020)]. This finding may be a consequence of the combination of falling income and rising rents.

Chart 6

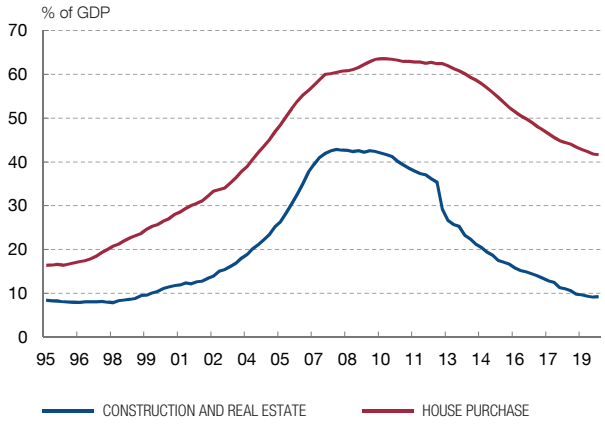
REAL ESTATE SECTOR RECOVERY WITH LOW CREDIT MOMENTUM

New lending for house purchase has been recovering since 2013, but it remains at historically low levels and is in fact lower than repayments of outstanding mortgage debt, which has gradually declined. The construction and real estate sector credit balance has fallen more sharply.

1 NEW LENDING FOR HOUSE PURCHASE
12-month cumulative



2 OUTSTANDING CREDIT BALANCE BY PURPOSE



SOURCE: Banco de España.

the high recorded in mid-2010. This pattern of real estate market recovery with low credit momentum has also been observed in other advanced economies (see Box 3). In the case of credit to the real estate construction and development sector, the contraction in the outstanding balance post-crisis has been even more intense: at end-2019 it stood at barely one-fifth of the 2007 high (see Chart 6.2). The decline was also very pronounced in terms of its share of total loans to business (down from 51% in 2007 to 24% in 2019, which is the lowest figure recorded since 1999).

The less expansionary behaviour of credit for house purchase in the most recent cycle is related to the lower level of house purchase by young people, who are the ones who generally require a higher percentage of borrowed funds when they invest in housing as they have a lower level of savings. In this respect, in the most recent cycle the share of house purchases made by investors with lower borrowing requirements seems to have increased. This would be the case, for example, of investors who, in a low interest rate setting, decide to transfer their savings held in the form of bank deposits or other financial assets to real estate assets, in some cases attracted by rising rental yields. Accordingly, while 91% of house purchases were credit financed in the period 20042006, between 2014 and 2019 this percentage fell to 67%. Moreover, as indicated above, among credit-financed purchases, the median LTP ratio fell between these two periods, from levels verging on 100% to 80%.

In turn, the weaker momentum of credit to the real estate construction and development sector is consistent with the relatively low levels of new housing starts discussed earlier.

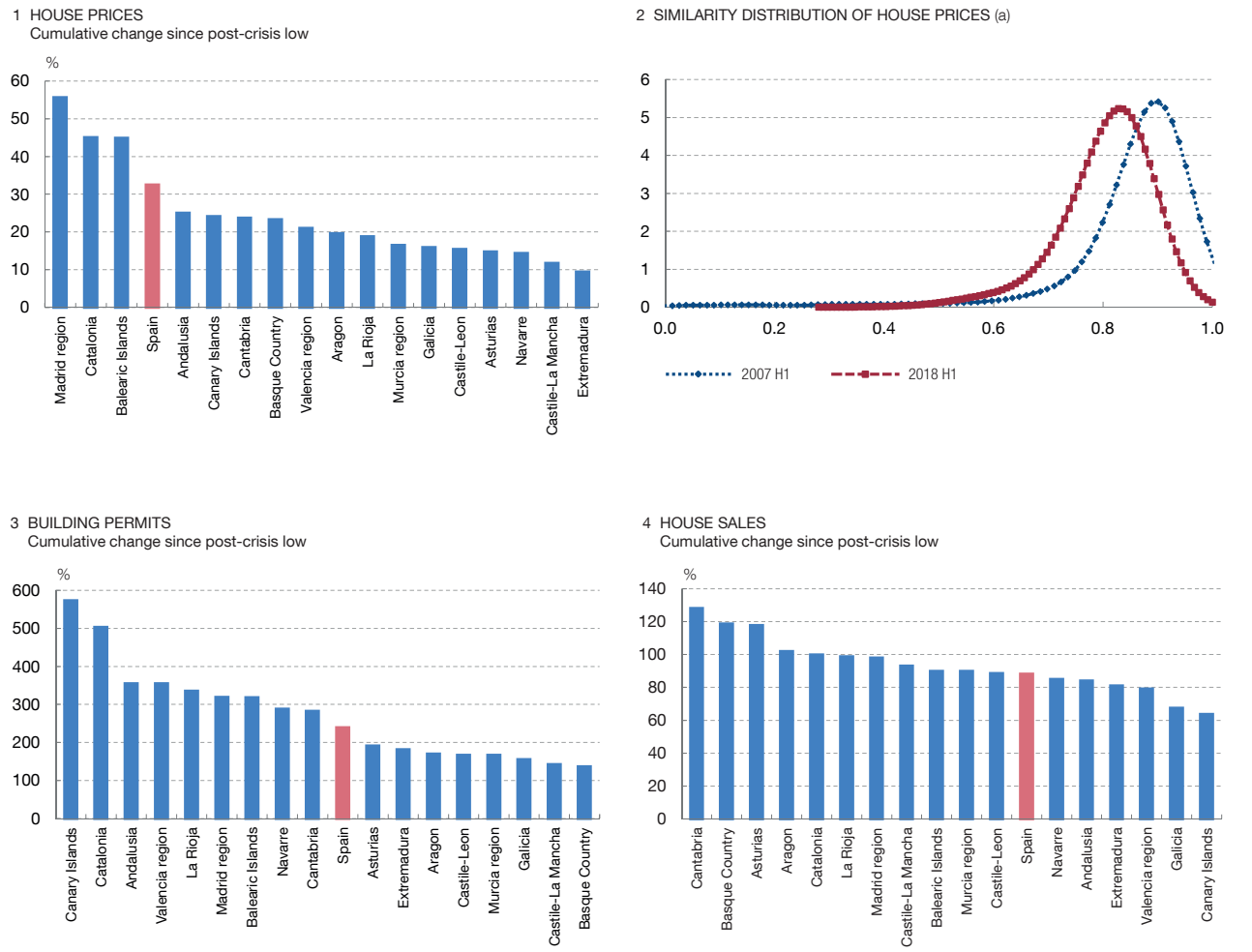
2.5 Uneven recovery in prices and volumes by geographical area

Another characteristic feature of the recent expansionary cycle of the Spanish real estate market is the high level of geographical heterogeneity in the recovery of prices and activity levels. In the case of prices, although they have risen in all regions, the rate of increase has been very uneven. Thus, the cumulative increase to 2019 compared with the low recorded post crisis (2014 in most regions) was much higher in a few regions such as Madrid (56%), Catalonia (45%) and the Balearic Islands (45%) than the average for Spain overall (32%), while in other regions it was less than 15% (see Chart 7.1).

Chart 7

UNEVEN DEVELOPMENTS IN HOUSE PRICES AND TRANSACTIONS BY GEOGRAPHICAL AREA

The strongest price recovery is in the Madrid region, Catalonia and the Balearic Islands, all above the national average (32%). There is also large-scale regional heterogeneity in momentum in housing transactions and housing starts. In addition, in the current cycle, price moves present a lower degree of synchrony than in the expansionary phase that preceded the last real estate crisis.



SOURCES: Ghirelli, Leiva and Urtasun (2020), forthcoming, INE and Ministerio de Transportes, Movilidad y Agenda Urbana.

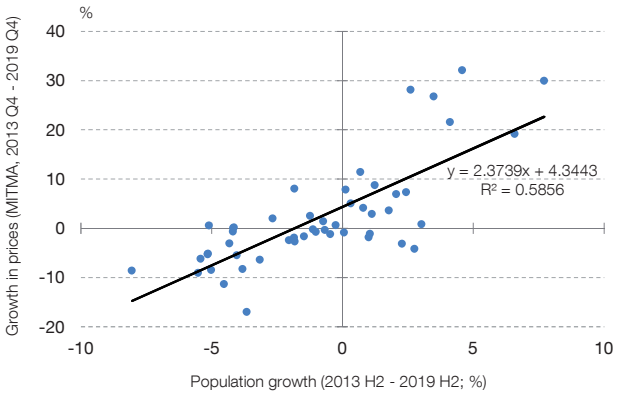
a The chart denotes the distribution of the degree of similarity between house prices associated with different cities. The data are presented for two specific periods: 2007 H1 (the blue line) and 2018 H1 (the red line). Distributions with densities closest to the value of one denote greater similarity between house prices for the relevant period.

Chart 8

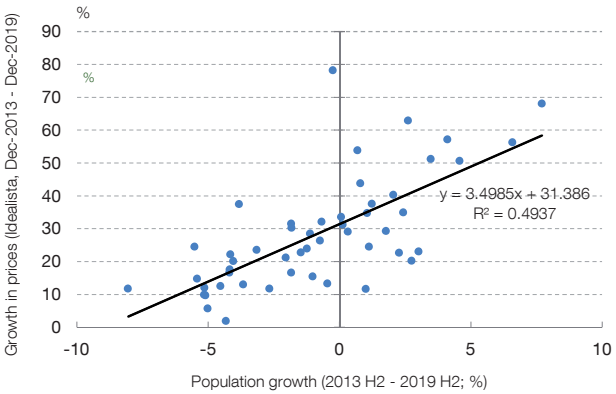
MOST PRONOUNCED INCREASES IN HOUSE PRICES AND RENTAL PRICES IN REGIONS WITH HIGHEST POPULATION GROWTH

In the present expansionary cycle there is a strong positive correlation between cumulative population growth and both house and rental prices. The different levels of demographic pressure may have influenced price moves in the regions, against the backdrop of an inelastic housing supply.

1 CUMULATIVE GROWTH IN HOUSE PRICES AND POPULATION BY PROVINCE



2 CUMULATIVE GROWTH IN RENTAL PRICES AND POPULATION BY PROVINCE



SOURCES: Banco de España, Idealista, INE and Ministerio de Transportes, Movilidad y Agenda Urbana (MITMA).

However, since mid-2018 the growth in house prices has decelerated in the regions that were reporting the most dynamic behaviour since 2014, while it has accelerated in all the others. Similarly, Chart 7.2 shows that, in the current cycle, price moves present a lower degree of synchrony between municipalities than in the expansionary phase that preceded the last crisis.[11]

Rents have followed an upward path overall, albeit also an uneven one by geographical area, with the largest cumulative increases since the start of the economic and real estate recovery observed in the most dynamic areas in terms of housing market prices.

The volume of real estate transactions and housing starts also reflects a marked level of heterogeneity in the intensity of the recovery from the 2013 lows (see Charts 7.3 and 7.4).

Much of this disparity between regions in the strength of the recovery in prices and activity levels may be attributed to the geographical differences in population growth. Thus, as Chart 8 shows, there is a clear positive relationship between, on the one hand, cumulative growth in house prices and rental prices at the provincial level, and on the other population

11 With the aim of identifying the determinants that explain the change in synchrony over time between house prices in different Spanish cities, Ghirelli, Leiva and Urtasun (2020) estimate a gravity model for the period 1989 H1-2018 H1. The coefficient associated with this variable is significant with a confidence level of 1% and suggests that a bigger difference in population growth rates between two cities is associated with a lower degree of synchrony between house prices in those two cities. This finding is robust to different sample selections and is obtained considering all of the sample and also excluding Barcelona and Madrid from the sample.

growth in the recent real estate market upturn.12 In this respect, there is a notable increase in population in the two most highly populated provinces (Madrid and Barcelona), which also account for an increasingly large share of economic activity. Population growth in the islands and in some areas of the Mediterranean coast (such as Malaga) is also significant, driven by the tourism boom and the demand from retirees from both Spain and the rest of Europe wishing to establish their residence there. Demographic pressure against a backdrop of an inelastic housing supply largely explains the higher increases in house prices in these areas. This same phenomenon is observed in other advanced economies, affecting in particular large metropolitan areas (see Box 3).

12 There was also a positive correlation between these two variables in the previous upturn. The main difference is that, in the current cycle, population has decreased in some areas, whereas in the previous cycle it increased – albeit unevenly – across the board.

3 Do certain groups in Spain face housing affordability difficulties?

3.1 The evidence available on housing affordability difficulties

In recent years, financing conditions for house purchases have become harsher for groups with low levels of accumulated savings. Since house purchases are usually financed by borrowing, housing affordability depends not only on the price of this asset, but also on financing conditions. These conditions include the maximum percentage of the purchase price that banks are prepared to finance, the term of the loan and the rate of interest. To approximate the affordability of mortgage-financed house purchases two indicators can be used. First, the proportion of household income used to pay the loan measures the debt-servicing burden. Second, that part of the purchase price not financed by debt, expressed as a percentage of income, measures the initial burden. The developments in these two indicators since 2000, based on the average conditions existing in Spain in each period, are shown in Chart 9.[13] The debt-servicing burden has remained at around 30% since 2014, well below its all-time highs recorded in late 2008 (close to 60%). The decline in the debt-servicing burden, in comparison with the conditions prevailing in the pre-crisis period, is explained by lower house prices, the decrease in the median loan amount as a proportion of the purchase price and the fall in interest rates. In contrast, the initial burden has, in recent years, been at its highest level in the period analysed. This is basically a consequence of greater prudence on the part of deposit institutions, which has led to stricter limits on the ratio of the loan amount to the purchase price. Accordingly, at the end of 2019 housing affordability was very tight for groups, such as the young, that have not been able to build up savings to cover that part of the cost that cannot be financed with credit. By contrast, affordability for other groups, with prior savings, was relatively easy in historical terms.

In any event, there is a high degree of heterogeneity at regional level in housing affordability difficulties, which aggregate indicators, such as those mentioned in the previous paragraph, do not capture. An affordability indicator that does capture this heterogeneity is the ratio of average house prices to average household income at regional level. Using this approach for provincial capitals with 2016 data (the latest available), San Sebastián, Barcelona, Bilbao, Madrid and Cádiz are found to have the highest house price-to-income ratios, these being more than 50% higher than the median ratio for all the provincial capitals (see Chart 10.1). Similarly, the first four capitals mentioned above have the highest ratios of average rental to annual household income, these being more than 50% higher than the median ratio for all the provincial capitals (see Chart 10.2).

The delay in household formation and in the probability of being an owner occupier over the life cycle observed in recent years also reflects the greater housing affordability difficulties for young people. Access to home ownership requires having

13 Specifically, the amount that the median household with a median loan must pay in the first year following purchase. The average price of a 93.75 m^2 dwelling, the median household income and the median financing conditions prevailing in each period (term, interest rate and loan-to-value ratio) are used for this purpose. Available tax relief is also taken into account where relevant (up to end-2012).

Chart 9

THE INITIAL BURDEN OF BUYING A HOME HAS INCREASED

In recent years the debt-servicing burden of buying a home has remained relatively steady at around 30% of annual household disposable income, but the initial burden has increased. This has made home ownership less affordable for groups with low prior savings, such as the young.

1 DEBT-SERVICING BURDEN OF BUYING A HOME (a)

2 INITIAL BURDEN OF BUYING A HOME (b)

SOURCES: Banco de España and Spanish Association of Registrars.

a Defined as the amount of the instalments that must be paid by the median household, net of tax allowances until end-2012, in the first year following purchase of a home financed with a median loan, as a proportion of household gross disposable income. The debt-servicing burden is also known as the "annual notional burden".
b Defined as: (1 – ratio of loan to median house price) * (house price / gross household income).

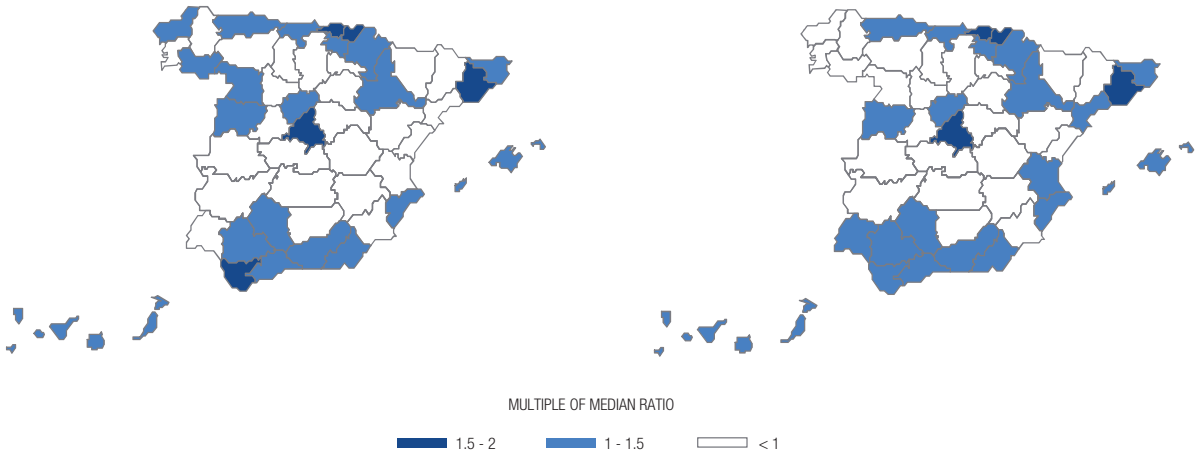
Chart 10

THERE IS A HIGH DEGREE OF HETEROGENEITY IN HOUSING AFFORDABILITY

The capital cities of Gipuzkoa, Barcelona, Bizkaia, Madrid and Cádiz have the highest house price-to-income ratios, which are more than 1.5 times the median ratio for the Spanish provincial capitals. Likewise, Barcelona, Madrid, Bilbao and San Sebastián have the highest rental price-to-income ratios in 2016.

1 HOUSE PRICE-TO-INCOME RATIO BY PROVINCIAL CAPITAL IN 2016 (a)

2 RENTAL PRICE-TO-INCOME RATIO BY PROVINCIAL CAPITAL IN 2016 (a)



SOURCE: Banco de España, Idealista, INE and Ministerio de Transportes, Movilidad y Agenda Urbana.

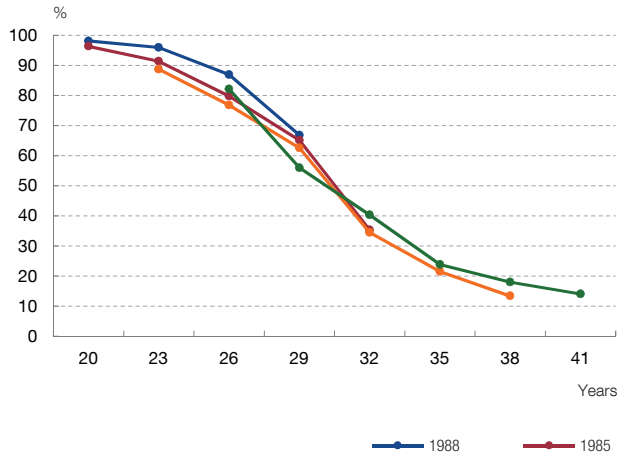
a Affordability is calculated as the average sale price or annual rental in 2016 of a standard sized dwelling as a proportion of average household income in the municipality in 2016 (latest data available).

Chart 11

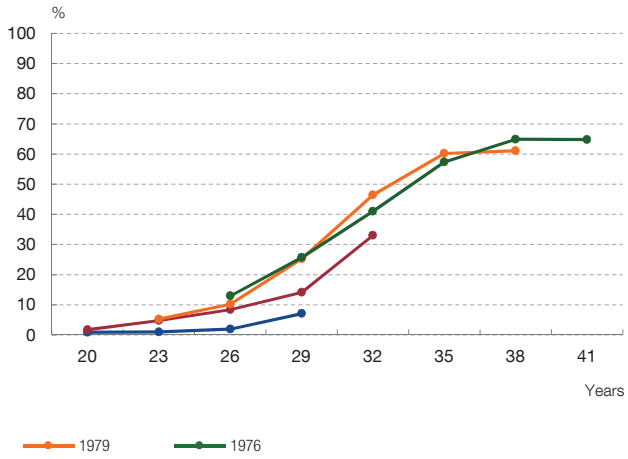
INCREASE IN THE AGE AT WHICH YOUNG PEOPLE LEAVE THE FAMILY HOME AND BECOME HOMEOWNERS

The proportion of persons who own their homes at the age of 30 has been declining for those born from 1980. Also, the proportion of young people who have formed households at the age of 26 has fallen. These findings indicate increasing housing affordability problems, in the case of both rental and purchase.

1 PROBABILITY OF LIVING WITH PARENTS OVER THE LIFE CYCLE BY YEAR OF BIRTH



2 PROBABILITY OF OWNING FIRST HOME OVER LIFE CYCLE BY YEAR OF BIRTH



SOURCE: Banco de España, drawing on the Spanish Survey of Household Finances (EFF 2002 - EFF 2017).

savings to pay the portion of the cost of purchase that is not financed by a mortgage. Income from employment is relatively low at the beginning of a working life and increases with age, so that generally funds can only be saved for house purchase after several years in employment. In comparison with other European countries, this process has traditionally had two distinctive features in Spain. First, household formation takes place relatively late. Second, access to home ownership was relatively rapid for those generations born before the 1970s (see Chart 11). Consequently, the long period spent in the parental household and the relatively early access to ownership meant that the stage of life in which young Spanish people rented housing was relatively short.[14] As seen in Chart 11, the generations born since 1980 have different patterns of housing tenure to those born previously. Around 87% of those born in 1988 lived with their parents at the age of 26, 5 pp higher than the percentage of those born in 1976.[15] At the same time, while around one in every 14 of those born in 1988 (7%) owned their main residence at the age of 29, for those born in 1976 this proportion was one in four (26%).[16] As a result of these developments, generations born after 1980 rent their housing for a longer period of time than previous generations, so that their ability to save will largely depend on the proportion of their income used to pay rentals.

14 See the international comparison of new household formation in Martins and Villanueva (2006).

15 This development is not specific to Spain. In the United States, Dettling and Hsu (2018) and Cooper and Luengo-Prado (2018) explain the increase in the proportion of adult children cohabiting with their parents in that country in terms of the greater sensitivity of the decision to form a household to changes in the cost of credit and the labour-market situation.

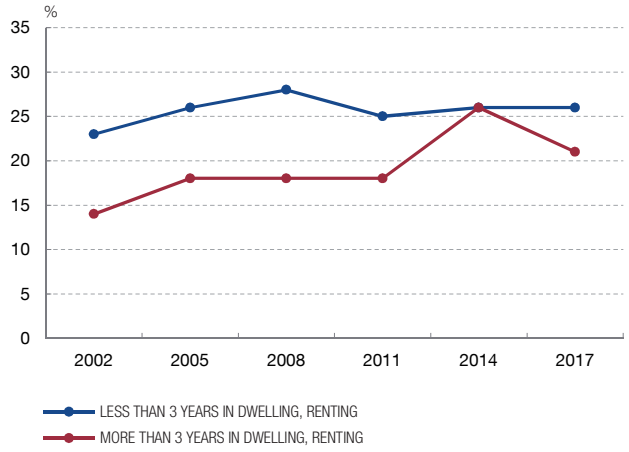
16 These changes are not specific to Spain. See Paz-Pardo (2019) and Malmendier and Steiny (2016).

Chart 12

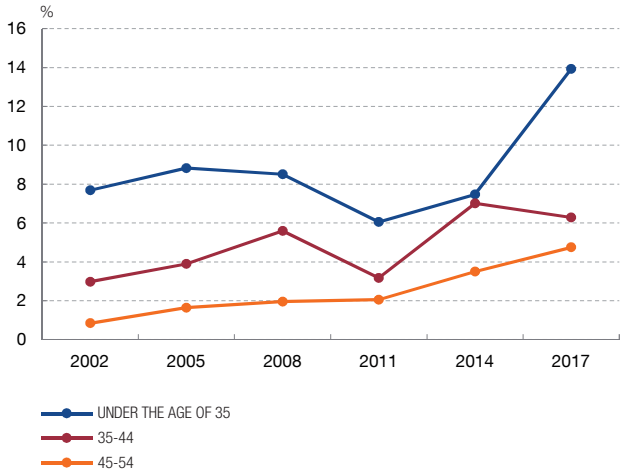
THE PERCENTAGE OF HOUSEHOLDS WHO SPEND A HIGH PROPORTION OF THEIR INCOME ON RENTAL IS RISING

The increase in the proportion of income devoted to rental payments has increased significantly since 2002 for the group that have been more than three years in their homes. Also, since 2011 the proportion of housholds who devote more than 30% of their income to rental has been increasing. In contrast, the proportion of income that owners with mortgages spend on mortgage instalments has not been rising. The proportion of households devoting more than 30% of their income to payment of their mortgage was decreasing in the period up to 2017.

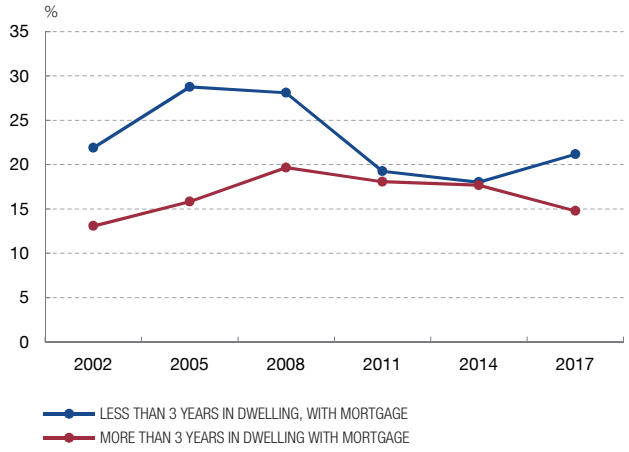
1 MEDIAN PERCENTAGE OF INCOME DEVOTED TO RENTAL COSTS



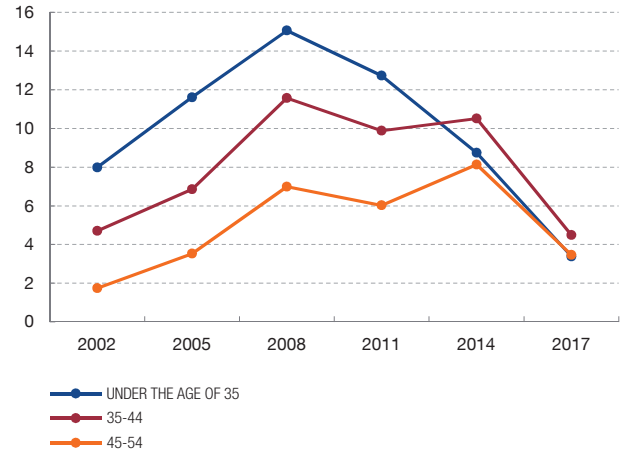
2 PERCENTAGE OF HOUSEHOLDS THAT DEVOTE MORE THAN 30% OF THEIR INCOME TO RENTAL BY AGE GROUP (a)



3 MEDIAN PERCENTAGE OF INCOME DEVOTED TO HOUSE PURCHASE



4 PERCENTAGE OF HOUSEHOLDS THAT DEVOTE MORE THAN 30% OF THEIR INCOME TO PAYMENT OF MORTGAGE BY AGE GROUP



SOURCE: Banco de España, drawing on the Spanish Survey of Household Finances (EFF 2002 - EFF 2017).

a Including households renting at market prices.

Spending on rental housing as a proportion of household income has been increasing progressively since the beginning of this century. As mentioned above, the cost of renting has been increasing in Spain since the beginning of the economic recovery that followed the financial crisis. The effect of this increase on the proportion of income devoted to spending on housing may vary across age and income groups. First, employment income increases over the life cycle, so that those seeking their first home frequently have fewer

funds with which to cover an increase in the rental price. Second, if young people postpone forming a new household or move to areas with lower rentals then the higher rental cost will be passed through to the proportion of income spent on housing to a lesser extent.[17] According to the results of the EFF, the proportion of income that households that have been renting for more than three years spend on rental has been progressively rising in recent years (see Chart 12.1). In contrast, for newly renting households this percentage has remained relatively stable, possibly because some young people have postponed forming a new household given the increase in the cost of housing.[18]

The proportion of households for which spending on rental housing exceeds 30% of their income has also increased. Generally spending more than 30% of income to pay for housing is considered to considerably limit household spending and saving capacity.[19] Between 2011 and 2017, the proportion of households below the age of 35 that devoted more than 30% of their income to rental increased by 8 pp, to 14% (see Chart 12.2). An increase was also observed for older households, but it was more moderate (around 2 pp). This growth is explained both by higher housing rentals and by the increase in households renting their dwellings.

Judging by recent rental developments, over the last few years the proportion of household income devoted to spending on housing may have continued to rise for those households renting their dwellings. Indeed, the data available suggest that, since 2017 (the latest year for which EFF data is available on rental spending at household level), rental prices have continued to rise at a faster rate than incomes. Moreover, it should be taken into account that the EFF data do not completely reflect the increase in the prices of new transactions in the rental market, since they do not affect renting households until their rental agreements expire, when the terms and conditions are renegotiated.

Conversely, the proportion of homeowners' income used to pay their mortgage declined between 2008 and 2017.[20] Specifically, the median proportion of income used for this purpose by those owners who have owned their home for more than three years fell during this period by 5 pp. Also, the proportion of households devoting more than 30% of their income to mortgage payments fell, especially in the case of households below the age of 35 (by almost 10 pp) (see Charts 12.3 and 12.4). This pattern, which is compatible with the information contained in Chart 9.1, appears to have been the result, on one hand, of the ongoing decline in interest rates and, in the case of households that had purchased their housing within the three years prior to their survey interview, also of the fall in house prices, until 2014. At the same time, the decline in the proportion of the house purchase cost that is financed also appears to have played a role.[21] In addition, this trend is also explained by the

17 García-López, Jofre-Monseny, Martínez-Mazza and Segú (2019) show that the rise in rental prices driven by certain platforms has shifted rental demand to areas of Barcelona with less tourism.

18 Aparicio-Fenoll and Oppedisano (2015) document a negative impact of rental cost increases on decisions to form new households in Spain.

19 The 30% threshold is a measure used by the OECD (Housing Database Indicators) and by Larrimore and Schuetz (2017).

20 Including only payments associated with the mortgage.

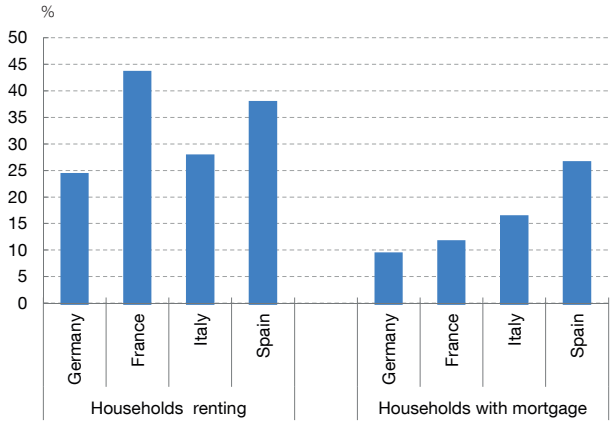
21 A similar development has been observed in Germany; see Dustmann, Fitzenberger and Zimmermann (2018).

Chart 13

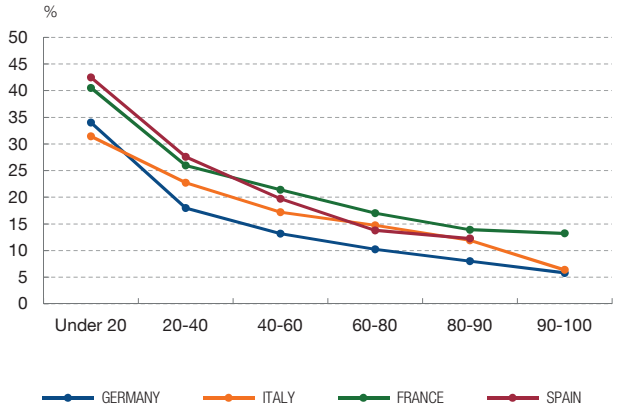
IN SPAIN, CERTAIN GROUPS FACE GREATER HOUSING AFFORDABILITY PROBLEMS THAN IN OTHER EUROPEAN COUNTRIES

Among the largest euro area countries, Spain has the highest spending on housing, especially in the case of young and low-income households. Renting households in Spain, with below median income, devote a higher fraction of their income to rental payments than in Germany, France or Italy.

1 PERCENTAGE DEVOTING MORE THAN 30% OF INCOME TO PAYING FOR HOUSING IN 2017 (18-34 AGE GROUP)



2 MEDIAN PERCENTAGE OF INCOME DEVOTED TO RENTAL IN 2017, BY INCOME PERCENTILE



SOURCES: Banco de España, using data from the Spanish Survey of Household Finances (2017), and the Household Finance and Consumption Survey (third wave).

decline in the proportion of home ownership and may also reflect changes in the characteristics of new owners (see Box 1). In any event, it should be taken into account that, unlike in the case of renting households, the change in the cost of housing for owners is not generally affected by changes in property market conditions after they have acquired their housing.

A comparison with other European countries shows greater housing affordability difficulties in Spain for certain groups, such as the young and low income households. This partly reflects the greater income inequality in Spain.[22] Thus, compared with other European economies, Spanish young people face high housing costs relative to their incomes. Specifically, in 2017, 38% of renting Spanish households below the age of 35 devoted more than 30% of their income to their rental payments. This is a lower percentage than in France (43%), but more than 10 pp higher than in the case of young Germans and Italians (see Chart 13.1). Also, 25% of young Spanish owners devoted more than 30% of their income to payment of their mortgage, a percentage that is more than 10 pp and 17 pp higher than in the aforementioned countries. The comparatively high proportion of Spanish households below the age of 35 that devote more than 30% of their income to an inflexible item of spending, such as housing, may be limiting their ability to save.[23]

22 See Anghel et al. (2018).

23 On the availability of financial wealth to Spanish households to address fluctuations in income and asset prices, compared with that available to those in other Eurosystem countries, see Slacalek, Tristani and Violante (2020).

Likewise, Spanish renting households with below median income generally devote a larger percentage of their income to rental than those in Germany, France or Italy. Housing is an asset that is not readily divisible, so that renting households have to spend a minimum amount that represents a higher proportion of income for low-income households. In fact, in practically every OECD country, the proportion of income spent on rental increases as household income decreases.[24] An increase in rental costs, like that experienced in Spain, increases spending on housing, especially among renting households that have had most difficulty changing their home, which are normally those with the lowest incomes.[25] Thus, in 2017, the proportion of income devoted to rental was especially high among Spanish households with below median income. Specifically, among households in the lowest income quintile, half of them spent more than 42% of their income on rental payments, around 10 pp more than in Germany or Italy (see Chart 13.2). In the next income quintile, half of households devoted more than 27% of their income to rental payments, 10 pp more than in Germany and 5 pp more than in Italy.[26]

3.2 Challenges for government intervention in the housing market

A properly functioning market for housing, in particular for rental housing, is important from many perspectives, such as the macroeconomic, financial and social ones. Housing supply shortages that result in rising prices may lead to affordability problems for certain groups and give rise to inefficiencies and risks in the functioning of the economy and the financial system. In the specific case of the rental market, the inability of supply to absorb a rapid increase in demand prevents the labour market from functioning efficiently by hampering the mobility of labour and jobseekers. Moreover, when rental prices increase by more than labour incomes, the proportion of households whose ability to spend on other goods and services is considerably restricted increases, as does the proportion of the population at risk of social exclusion. These affordability problems also contribute to delays in household formation, with potentially negative implications for the fertility rate.[27] Finally, the possible connection between house prices and the return on investment in rental housing introduces a possible channel for sudden rises in house prices, and potentially in mortgage credit, arising from inefficient functioning of the rental market.

Government intervention in the rental market can alleviate housing affordability problems and the consequent inefficiencies at macroeconomic level (see Figure 2). In other countries, public policies implemented in this area in recent years have been focused on alleviating the relative scarcity of rental housing and on containing the sharp increases in rental prices that generate problems of housing affordability in some of the main metropolitan areas of advanced economies. However, international experience shows the complexity involved in designing and implementing rental market policies, as well as their dependence

24 See Godefroy (2018).

25 In the United States, Notowidigdo (2019) finds that the probability of changing residence increases with level of education. For Spain, see González-Chapela (2020).

26 The OECD Housing Database provides estimates of spending on housing for households in the bottom disposable income quintile, based on the Survey of Income and Living Conditions. The estimates for France indicate a lower level of spending than this paper. Also, Godefroy (2018), using a different methodology, presents estimates from France, similar to those shown here.

27 Barceló and Villanueva (2018).

Figure 2

THE CHALLENGES OF PUBLIC INTERVENTION IN THE HOUSING MARKET

THE ROLE OF PUBLIC POLICY IN THE RENTAL HOUSING MARKET

Objective: To alleviate housing affordability problems

Policies are complicated to design and implement

Their effectiveness depends on:

— their interaction with the macroeconomic situation,
— local housing market constraints and
— how they are combined with other policies that also affect the housing market,
— having reliable data on household income and rental prices.

DIRECT MEASURES	IMPLEMENTATION	ADVANTAGES AND DISADVANTAGES
Increasing the aggregate supply of rental housing available to the most vulnerable groups	Public housing provision is combined with private sector stimulus to produce an increase in aggregate supply	These are the most effective policies, especially when focused on market segments with the greatest scarcity
		— High budgetary cost, so focus on most vulnerable groups — Risk of crowding out private supply
Placing temporary limits on rental housing prices	Applied in areas with significant price strains to mitigate affordability problems	Problem of rental spending overburdening certain groups addressed immediately
		— Underlying causes of affordability problem not addressed — A further contraction of supply in regulated areas may be generated and prices may rise in other areas

INDIRECT MEASURES

— Liberalisation of those aspects of urban planning and land use that obstruct housing availability in areas with affordability problems
— Restrictions on tourist rentals due to their possible adverse effect on residential rentals
— Policies to encourage the professionalisation of the rental market
— Increasing legal certainty and reducing regulatory uncertainty

SOURCE: Banco de España.

on a broad range of idiosyncratic factors specific to each economy. In particular, the effectiveness of policies in the residential rental market depends on their interaction with the macroeconomic situation, local housing market constraints and how they are combined with other policies that also affect the housing market (e.g. fiscal and labour market policies), as well as the income dynamics of households demanding rental housing.[28]

28 A discussion of international experience of public policies in the rental housing market, as well as a review of the available evaluations of the effects of the most significant interventions, can be found in López-Rodríguez and Matea (2020).

The most effective housing policies appear to be those that increase the supply of rental housing available to the most vulnerable groups in a stable manner. In principle, the most appropriate way to address the underlying causes of excessive price increases persistently is to steadily increase the supply of rental housing. This is most effective when the increase in supply is concentrated in those market segments with the greatest shortage of affordable housing. Such policies usually involve a combination of stimulus to the private sector to provide a progressive and sustained increase in supply and public provision of rental housing. When designing such policies, it is essential to ensure that public provision does not crowd out private supply, and thereby reduce the effectiveness of the measures.[29]

Policies to increase the supply of rental housing are costly, so that funds should be mainly targeted at groups with the greatest housing affordability problems. Public provision of housing in advanced economies has declined in recent decades, owing to its high budgetary cost and the difficulties involved in this type of intervention. As a result, public funds have been used to provide incentives for the supply of private rental housing by increasing legal certainty for suppliers and granting guarantees and tax relief.[30] [31] Against a background of limited fiscal space, the constant need for efficient use of public funds requires implementation to be much more selective and effective. In addition, funds need to be focused on the most vulnerable groups (the young and low-income households), which, as documented above, are those most affected by housing affordability problems.

The degree of legal certainty and the regulatory framework for rental housing owners affect the supply of private rental housing. In this respect, international evidence shows that the degree of effective legal protection of rental housing owners and the development and size of the rental housing market are related.[32] In particular, when rental agreements have long minimum duration periods, rules limit rental increases over a long period and termination clauses (in the event of recurrent failure to pay or damage to the housing, for example) are restricted, the supply of rental housing declines and the entry of new agents into the rental housing market is discouraged. Where private supply is insufficient, strengthening policies that give greater legal and regulatory certainty to owners considering renting out housing has been justified.[33] These policies can be adjusted according to the housing affordability problems of certain

29 Sinai and Waldfogel (2005) provide evidence of the impact of public housing provision programmes on the aggregate supply of rental housing in the United States. Specifically, they estimate that public programmes for the provision of social housing, on average, crowd out two thirds of the private supply of rental housing. This effect was particularly important in metropolitan areas, where the demand for rental housing was found to be lower.

30 Tax incentives for supply have been considered preferable to the classic subsidies to support rental demand. In situations of rapidly rising rental prices caused by supply rigidities, subsidies are passed through to prices, with the result that the policy is ineffective and costly for the public finances (Susin (2002) and Gibbons and Manning (2006)).

31 An example of this type of intervention is the Low Income Housing Tax Credit (LIHTC) programme in the United States. Under this programme, tax credits are granted to real estate developers who build or refurbish rental housing for low-income households. Also, ranges are established for rental prices, below market levels, and the housing built with the support of this type of programme must remain subject to social rental conditions for 30 years. Since it was established in 1986, this programme has produced more than 2.5 million homes for low-income households and has been the main programme providing rental housing for low-income households in the United States [Desai et al. (2010) and Collinson et al. (2016)].

32 For further details, see Casas-Arce and Saiz (2010).

33 For example, through increases in the amounts of bonds, deposits or guarantees at the time of the signing of the rental agreement or tenants taking out non-payment insurance. Also, some studies show that the existence of rapid and effective eviction mechanisms in the event of non-payment or damage to rental housing is an important insurance mechanism for rental housing owners [Djankov et al. (2003) and OECD (2016)].

groups and in specific markets. For example, some degree of protection can be introduced by stabilising rental prices for a minimum part of the duration of the rental agreement.[34]

The increase in the aggregate supply of rental housing may require a more active role for wholesale investors who channel a significant part of the economy's saving capacity towards this sector. This mobilisation of savings may also have the advantage of generating an increase in efficiency in retail investors' portfolios. However, the main gain to be derived from greater professionalism in the sector would be the expected reduction in rental housing management and search costs, as well as greater possibilities for institutional investors (with portfolios made up of a large number of agreements) to diversify the risk of non-payment, in comparison with retail investors. According to the specialised literature, the existence of these costs and risks discourages supply by retail investors, thereby contributing to lower supply and an increase in rental prices. In this respect, the greater legal certainty and stability provided by the regulatory framework, supplemented by the existence of tax relief for wholesale supply, would encourage a greater presence of these agents in the rental market.

Short-term rental supply rigidity has in some cases led to the introduction of temporary measures to limit rental prices. In recent years, measures that seek to limit rental price growth temporarily in order to mitigate affordability problems in areas where they are particularly serious have been adopted in some large cities. These measures have the advantage of immediately targeting the problem of rental spending overburdening certain groups and, in principle, require no new budgetary resources. However, price controls do not address the main underlying cause of the problem, which is a lack of supply to meet the demand. Moreover, they may generate a further contraction in supply in regulated areas, as well as an increase in prices outside those areas in the medium term. In this respect, the international evidence available confirms the risk that potentially significant adverse effects will emerge, especially when price controls are maintained for prolonged periods.[35]

Indirect interventions that increase rental housing supply are another tool to stabilise prices in this market. Internationally, indirect policies have focused on detecting and adjusting those aspects of urban planning and land use that limit housing availability in areas with affordability problems. In addition, in cities with a high density of tourism activity, restrictions have been placed on tourist rentals due to a possible shift in housing use from residential to tourist use.[36]

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34 See, for example, Arnott (1995) and Favilukis et al. (2019).

35 Notable among the adverse effects documented by the economic literature are a reduction in residential investment and in housing maintenance expenditure, a shift in supply towards unregulated high-purchasing power market segments, segmentation of the population according to socio-economic conditions and a reduction in labour mobility stemming from a reluctance to lose below-market rentals.

36 For example, the following measures have been introduced in some cities: i) the need for a licence to use residential housing that complies with the requirements laid down by the municipality for tourism activity (e.g. in Paris, Berlin and San Francisco); ii) a tax on tourism activity (e.g. in Amsterdam, Brussels, Paris, Rome, Florence, Lisbon, Prague, and San Francisco); and iii) strict limits on the maximum number of days housing can be used for holiday rentals (e.g. In Amsterdam, London and Paris). In addition, some major cities have introduced regulations limiting the possibility of holiday rentals when the housing is not the owner's main residence or have limited the letting of main residences to short periods (e.g. New York, Berlin and San Francisco).

In any case, proper diagnosis of households' housing affordability problems and public policy design require reliable administrative data on household income and rental prices. Apart from the availability of up-to-date information of this type, it is essential that the statistics on which public policy is based consider the existence of composition effects in relation to rented housing, arising from heterogeneity over time and across geographical areas. Consideration of these composition effects would, for example, allow the construction of price indices that are comparable between geographical areas and over time.

In recent years, a number of measures have been taken in Spain to try to mitigate rental housing affordability problems and to increase the supply of rental housing. As regards policies that attempt to directly mitigate rental housing affordability problems, the measures introduced by Royal Decree-Law 7/2019 on the minimum duration of contracts, rental updating rules and limits on the value of guarantees given by tenants to owners are notable. Specifically, since 2009, Spain has been one of the OECD economies with the longest minimum contract duration: five years when the lessee is a natural person and seven years in the case of legal persons. At the same time, for the duration of the agreement, rentals may not be increased by more than the growth in the CPI. As regards the guarantees given to owners, new tenants may post bonds, bank guarantees or deposits amounting to a minimum of one month's rental and a maximum of three months' rental, in line with the average in OECD countries.[37, 38]

Turning to interventions to increase the supply of rental housing, these have been based mainly on the introduction of tax relief to encourage private sector supply. In particular, there is an exemption from personal income tax (IRPF) for property income arising from housing rental, and tax relief for property investment companies that allocate funds to property rental.[39]

Traditionally, few budgetary resources have been assigned to the public provision of rental housing in Spain; the public financing of home ownership, normally at below market prices, through government-sponsored housing (Vivienda de Protección Oficial, VPO) programmes has been prioritised instead.[40] In recent years, however, there has been a shift in the orientation of public housing policy towards social rental housing.[41] For example, subsidies paid to the developers of low-price rental housing have been boosted. These subsidies are used/intended for housing development and refurbishment, on the condition that neither the tenants' income nor the rentals exceed certain thresholds.

37 See OECD (2019).

38 Royal Decree-Law 7/2019 also modifies the procedures for eviction from a main residence, increasing the periods when especially vulnerable households are involved. In particular, a requirement is established for the social services to be notified, and where the household is determined to be in a situation of vulnerability the procedure will be suspended until such measures as social services deems appropriate are taken, for a maximum period of one month, or three months if the applicant is a legal person.

39 The main intervention to stimulate an increase in the supply of rental housing by legal persons was the improvement in 2013 in the tax regime for real estate investment companies (SOCIMI). In particular, undistributed property income is exempt from corporate income tax, provided that the property is rented out for at least three years. However, the income received by the investors in these vehicles is subject to tax.

40 On average, during the period 1995-2012, more than 60,000 homes were provided each year under VPO construction programmes. According to the information on VPO developments, in the period 2005-2012, only around 20% of these homes were earmarked for rental (López-Rodríguez and Matea (2019)).

41 Housing policies are based on the State Housing Plan, which establishes the framework for action, the main policy objectives, public subsidy eligibility requirements and a large part of the budgetary resources assigned. These policies are implemented mainly by regional and local governments with housing powers.

4 An assessment of the possible risks associated with the Spanish residential market before COVID19

4.1 Prices and their determinants

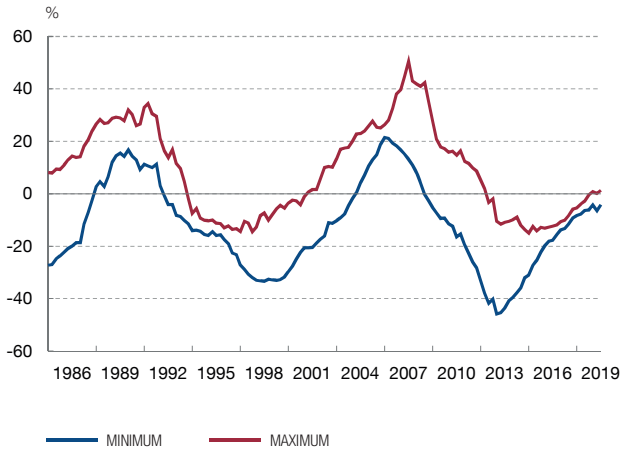
The valuation indicators available at end-2019 and, therefore, before the outbreak of the COVID-19 pandemic, suggested that average house prices in Spain could be close to their long-term equilibrium level. Given the difficulties involved in estimating these equilibrium levels, the Banco de España uses a broad range of indicators based on different methodologies. The most recent data, corresponding to 2019 Q4, show that deviations from the estimated equilibrium level were within a relatively narrow range, with no clear signs of overvaluation (see Chart 14.1). The upward trend of house prices in recent years has been gradually closing the negative gap that built up during the financial crisis, when housing values fell significantly below the level compatible with their long-term determinants (such as income, interest rates and demographic variables), following the sharp fall during the downturn. However, given the high level of regional heterogeneity in price movements, more granular information should be used to supplement the diagnosis based on aggregated data.

Chart 14

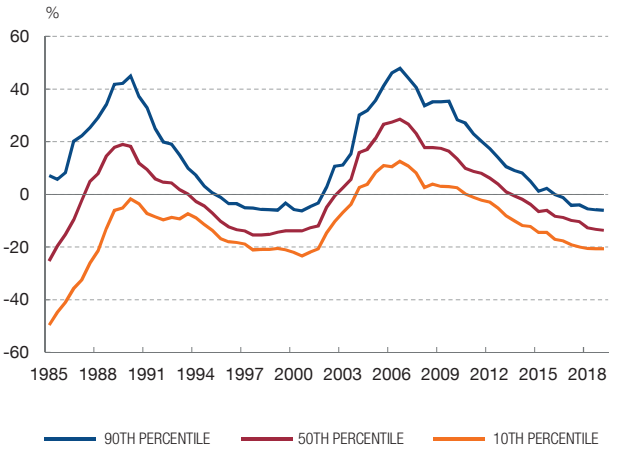
AT END-2019 THERE WERE NO SIGNS OF OVERVALUATION OF HOUSING, EITHER AT AN AGGREGATED OR A PROVINCIAL LEVEL

Housing indicators and valuation models showed no signs of overvaluation at the national level or for the vast majority of provinces.

1 HOUSE PRICES, IMBALANCE INDICATORS (a)



2 DISTRIBUTION BY PROVINCE OF HOUSE PRICE DEVIATIONS FROM ESTIMATED LONG-TERM EQUILIBRIUM LEVEL



SOURCES: Álvarez and García-Posada (2019) and Banco de España.

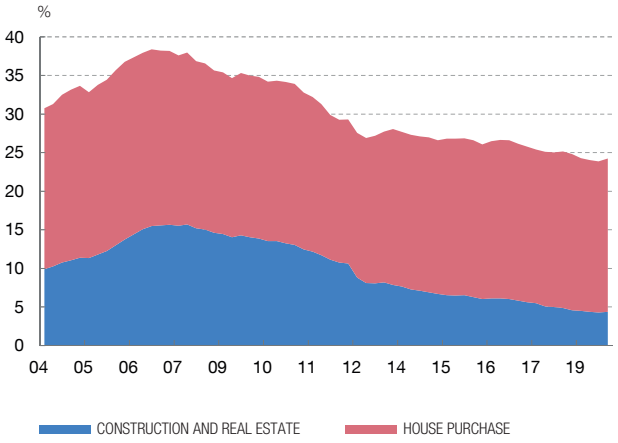
a The chart presents the maximum and minimum levels of four imbalance indicators. The first two are gaps calculated as the difference between the relevant variable in each period and its long-term trend for: i) house prices in real terms, and ii) the ratio of house prices to households' disposable income. The last two indicators are based on econometric models. The first, on an estimation using Ordinary Least Squares of house prices, in real terms, to households' disposable income and mortgage rates. The second, on an error correction model in which, in the long term, house prices, in real terms, depend on households' disposable income and mortgage rates. In all cases, the long-term trends are obtained using a one-sided Hodrick-Prescott filter with a smoothing parameter equal to 400,000.

Chart 15

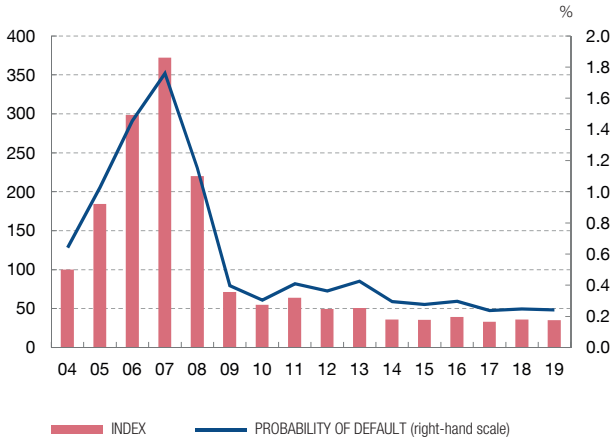
AT END-2019, BANKS' CREDIT RISK ASSOCIATED WITH THE REAL ESTATE SECTOR WAS RELATIVELY LOW

Since the onset of the last crisis, the weight on banks' balance sheets of loans for house purchase and lending to the construction and real estate sector has gradually been reduced. In addition, in recent years the estimated mortgage default risk has held steady at historically low levels.

1 WEIGHT OF LENDING TO REAL ESTATE SECTOR ON BANKS' BALANCE SHEETS



2 MORTGAGE DEBT AT RISK INDEX (a)



SOURCES: Banco de España, Colegio de Registradores, and Galán and Lamas (2019).

a The index reflects the risk of new mortgage lending, taking into account the volume of credit granted and credit standards.

The estimates based on provincial-level data confirm that, at end 2019, there were no clear signs of overvaluation for the great majority of Spanish provinces. As Chart 14.2 shows, in accordance with these estimates, average house prices at end-2019 were somewhat below their long-term equilibrium level in more than 90% of the provinces.[42] In addition, the dispersion of this indicator by province is relatively low in historical terms. This approach provides similar signals to those obtained using aggregated indicators. In particular, two periods with clear signs of overvaluation are identified, the first at the end of the 1980s and the second in the run-up to the last crisis. In any event, it is important to note that this approximation cannot identify possible overvaluation at a more granular level (municipalities or city districts), so the possibility of some prices being significantly misaligned with respect to those warranted by economic fundamentals cannot be ruled out.

4.2 Credit risks

Overall it is estimated that, at end-2019, deposit institutions' credit risks associated with their exposure to the residential real estate sector were relatively contained. First, because the weight of real estate-related credit on their balance sheets was relatively low, especially that of credit linked to the construction sector and real estate development, which is the component

42 The methodology used can be found in Álvarez and García-Posada (2019).

that generally entails most risk (see Chart 15.1). In addition, the more prudent credit standards compared with those observed in the run-up to the last crisis (lower LTP ratios and shorter mortgage terms) tend to reduce the probability of future defaults. Indeed, as Chart 15.2 shows, after increasing considerably up to 2007 and then falling sharply from the start of the financial crisis, the estimated probability of mortgage default has held steady in recent years at a historically low level.[43] The mortgage debt at risk index – which is depicted in Chart 15.2 and is constructed as the product of that probability and the amount of new lending – also suggests that debt at risk at end-2019 was relatively low compared with its historical series. As the chart shows, the indicator rose sharply in the run-up to the crisis that began in 2008, reflecting both the level of credit expansion and the excessive easing of credit standards. At end-2019 it stood at less than half the level observed in 2004 and was ten times lower than the high recorded in 2007, just before the start of the crisis. This shows that the financial stability risks have fallen significantly, although the greater affordability difficulties for some groups with higher probability of mortgage default pose housing affordability problems that must be addressed.

Importantly, the above analysis is based exclusively on the volume of credit transactions and the loan origination standards at each time, but it takes no account of the macroeconomic outlook. In this respect, a sharp deterioration in that outlook caused by an adverse shock such as, for example, the COVID19 epidemic will clearly affect the credit quality of balance sheets. In any event, the fact that this shock has come at a time when the above-mentioned risk indicators were low should help limit the possible spread of the shock to the financial system and the economy overall.

4.3 Risks for economic activity

The risks for economic activity associated with the situation of the real estate market at end-2019 also appear to be limited. First, the growth of the real estate market in recent years has not been accompanied by a widespread and significant overvaluation of housing. This mitigates the scale of possible future price decreases, which in turn limits possible negative wealth effects. In addition, real estate wealth tends to be more concentrated among higher income and higher wealth households. This may be expected to help moderate, to a certain extent, the effects of a hypothetical fall in real estate wealth on total household expenditure, although the increase in recent years in households' ownership of real estate assets for investment – for rental – could have the opposite effect. Second, the relatively small size of the real estate sector today, in terms of employment and investment, means that the macroeconomic effects of a potential real estate crisis would be comparatively more moderate than those observed during the crisis that began in 2008 (see Chart 1). Specifically, the impact on GDP of a given decline in residential investment in 2019 would be approximately half that of the effect in 2007.[44]

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43 The probability of default is estimated using a model that identifies its association with the credit standards applied at mortgage origination and other borrower and collateral characteristics. For more details on the estimated model, see Galán and Lamas (2019).

44 Specifically, according to the Banco de España's quarterly macroeconomic model, a drop of 10% in residential investment would have a cumulative contractionary effect on GDP in the first two years of 0.6 pp in 2019, while the effect of that same shock in 2007 would be 1.3 pp.

4.4 The role of macroprudential policies

Following the approval of Royal Decree-Law 22/2018 of 14 December 2018, the Banco de España has at its disposal several macroprudential tools that it may activate should it detect a possible increase in perceived systemic risk.[45] These include several tools that have a direct impact on the real estate market. From the standpoint of capital instruments, which directly affect banks, the Banco de España may establish a sectoral countercyclical capital buffer on real estate exposures, including mortgage exposures and exposures relating to construction sector and real estate development activity. Following the approval in 2019 of a review of the European macroprudential framework,[46] a sectoral systemic risk buffer will be added to the toolkit, which may also be applied to real estate exposures in the case of risks not covered by the countercyclical capital buffer.

In addition, the Banco de España may set limits on credit standards when it understands that the existing conditions jeopardise financial stability. In particular, it will be able to set ceilings on the loan-to-value ratio, on borrowers' debt-to-income (DTI) ratios and on mortgage terms. However, a small share of new mortgages may be allowed to exceed these limits, to mitigate the impact of the measure on the most disadvantaged groups. Finally, in the last instance, the Banco de España may impose limits on the sectoral concentration of banks' exposures, which could prevent a repeat of the high levels of concentration on real estate activities observed in the run-up to the last real estate crisis.

To date none of these measures have been activated in Spain, as it is understood that these systemic risks are contained, but if this diagnosis changes they could be activated in future. In recent years, other European countries have introduced various macroprudential measures when there has been an increase in identified systemic risks, linked in many cases to the situation of their respective real estate markets.

45 Following the authorisation granted through Royal Decree 102/2019 of 1 March 2019, the Banco de España is currently in the process of developing secondary legislation, through a circular, to stipulate the technical details of the new macroprudential tools.

46 Directive (EU) 2019/878 (CRD-V) and Regulation (EU) 2019/876 (CRR-II).

5 Conclusions

This paper describes the main features of the Spanish housing market during the latest expansionary period (2014-2019). In consequence, it does not cover the possible impact on the market of the present crisis caused by the COVID-19 pandemic.

Despite the strong growth in real estate supply during the period analysed, the indicators remained at relatively moderate levels, from a historical standpoint, essentially owing to the low population growth during the period. Rental prices rose considerably, in response to a surge in rental demand, especially among young people, which the supply was unable to absorb. Another characteristic of this recent expansionary period was the comparatively lower use of credit to finance house purchases. This reflects the changes in the profile of house buyers – a larger proportion of whom have built up savings and have less need to resort to borrowing – and is also partly linked to more demanding credit conditions. Lastly, there was a high level of regional heterogeneity in terms of both activity and prices, largely explained by the unequal population growth in the different regions.

The evidence presented here suggests that, in recent years, housing affordability has become more difficult for certain groups, such as young people, low-income households and those living in metropolitan areas. These difficulties generate significant social challenges and macroeconomic inefficiencies. Public intervention in the rental market may help ease these problems. Among the different measures available, the most effective ones for this purpose appear to be those that concentrate on achieving a steady increase in the supply of rental accommodation available to the most vulnerable groups. Such policies are generally instrumented through a combination of measures encouraging a gradual and sustained increase in rental supply by the private sector and public provision of rental housing. Policies focused on detecting and recalibrating aspects of planning and land use regulations that limit the availability of housing in areas under pressure may also be considered.

Lastly, the paper shows that, by contrast to the situation in the upturn that preceded the financial crisis that began in 2008, real estate market developments in recent years have not given rise to overdimensioning of the real estate sector or to widespread and significant overvaluation of housing. This is an important mitigating factor which should help limit the possible amplification effects of exogenous shocks such as that associated with the COVID19 pandemic on the financial system and the economy overall.

Insofar as it will have a profound contractionary effect on income and economic activity, at least in the short term, the COVID19 pandemic will foreseeably also affect the real estate market. The near-term measures approved by the Government to ease the financial pressure on the most vulnerable segments, such as the mortgage moratorium and the deferral of rent payments, will help mitigate some of these effects in the short term. Greater uncertainty surrounds the more medium-term effects of the shock on the

real estate market and the impact of the measures introduced. In this respect, any rental market distortions that might ultimately undermine legal certainty should be avoided, as this would deter the increase in supply that is necessary to absorb the structural growth in demand documented in this paper.

Box 1

CHANGES IN THE LOAN-TO-PRICE RATIO AND PROPERTY MARKET DYNAMICS

The loan-to-price (LTP) ratio measures the percentage of the purchase price of housing financed by a mortgage loan. Combining information on newly created mortgages with the transaction prices recorded at the property registry, the median LTP ratio for housing is found to have fallen from a high of 107% in 2007 to 80% as from 2012.[1] At the same time, as documented in this paper, the age at which new households are formed has risen during this period, and newly formed households are tending to rent more than previously.

It is hard to establish the direction of causality between the fall in the LTP ratio and the changes in home ownership rates. One possibility is that households may have perceived a higher risk of losing their jobs since the beginning of the recession in 2008, and therefore may have chosen not to purchase housing or, when they have done so, to finance the purchase with a lower volume of debt. In this case, the fall in the LTP ratio would be a consequence of a decline in the demand for credit. Another possibility is that financial institutions have applied stricter credit standards since 2008, and have chosen to require purchasers to finance a larger proportion of the price of housing with their own funds.[2] In this case, the fall in the LTP ratio would be the cause of the changes observed in housing tenure.

Chart 1
MEDIAN LOAN-TO-PRICE RATIO FOR NEW MORTGAGES. MADRID

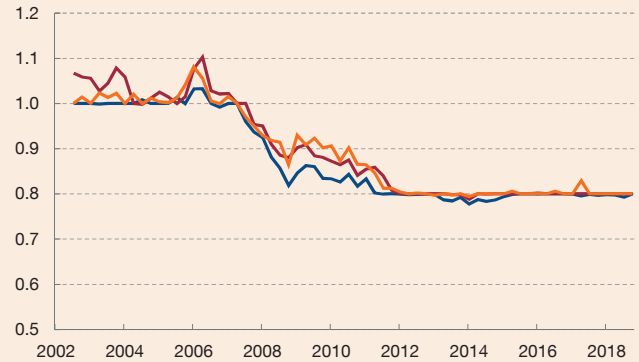


Chart 2
MEDIAN LOAN-TO-PRICE RATIO FOR NEW MORTGAGES. BIZKAIA

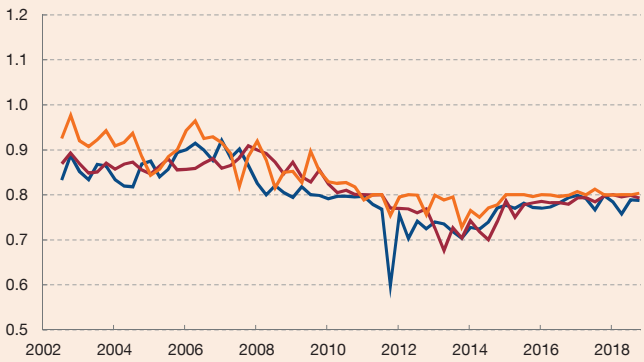


Chart 3
PROBABILITY OF REJECTION OF LOAN APPLICATION (UNDER 35s)

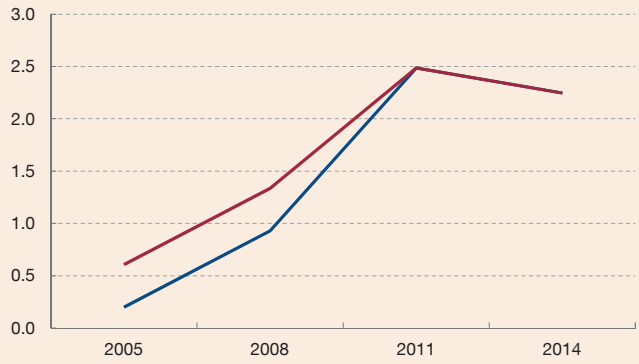
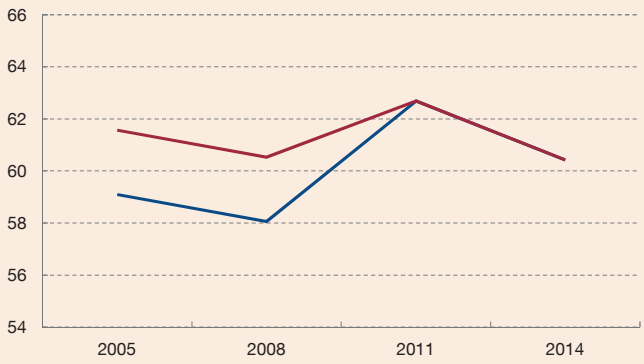


Chart 4
PROBABILITY OF LIVING WITH PARENTS (UNDER 35s)



SOURCES: Banco de España, drawing on the Spanish Survey of Household Finances (2002-2014), linked to property registry data.

1 See O. Bover, M. Torrado and E. Villanueva (2019), "The loan-to-value ratio in the Spanish economy: 2004-2016" *Economic Bulletin,* 1/2019, Banco de España, and J. E. Galán and M. Lamas (2019), *Beyond the LTV Ratio: New Macroprudential lessons from Spain,* Working Paper No 1931, Banco de España.

2 For example, Circular 3/2010 recommended that banks calculate LTVs using the lower of the value recorded in the property registry and the appraisal value. Since appraisal values exceeded property registry prices during the expansion between 2004 and 2007, this circular would have entailed a reduction in LTV ratios [see Bover, Torrado and Villanueva (2019) and Galán and Lamas (2019)].

This box uses the disaggregated information on households and municipalities in the period 2004-2014, first, to analyse whether credit supply-related factors have contributed to the fall in the use of bank financing after the crisis and, second, to characterise more precisely the relationship between the fall in the LTP ratio and housing affordability and access to credit. In this respect, it is important to note that the adjustment of this ratio has varied across municipalities (see Charts 1 and 2). For example, while the median LTP ratio for house purchases in the period 2004-2007 was more than 120% in Seville, this ratio stood at around 100% in Barcelona and Madrid and was, on average, less than 90% in the Bizkaia municipalities. Conversely, from 2012 onwards, the median LTP ratio stood at 80% in practically all the municipalities considered.

The geographical variation in this fall in the LTP ratio means that access to credit and housing can be compared for similar individuals in localities in which the adjustment in this ratio has differed. The analysis is based on linear regressions for a sample that links, for each municipality, EFF data (2004-2014) with mortgage creation data obtained from the property registry (2004-2014). The explanatory variables are the age group, the median LTP ratio and the interaction between them. The group omitted is the over 45s, since at their stage of the life cycle, the sensitivity of spending on housing to the LTP ratio is relatively more moderate. Qualitative variables containing information on the municipality, the year of the survey, gender and level of education are introduced as additional regressors.[3]

First, an analysis is performed of whether credit supply factors have played a role in the reduction of the LTP ratio. For this purpose the loan application rejection rate is evaluated, assuming that persons of similar age and level of education applying for loans in different localities have a similar credit quality. The main findings of this analysis are set out in Chart 3. This chart compares the probability of rejection of a loan application in a hypothetical municipality in which the median LTP ratio has fallen from 100% to 80% (as in Madrid) with the probability in another in which such ratio has remained unchanged at 80% (as in Bilbao), taking into account the specific and persistent characteristics of each municipality. The results indicate that, during the expansion leading up to the crisis that began in 2008, the loan rejection rate for persons under the age of 35, in a locality with a similar LTP ratio path to that of Madrid, would have been 0.4 pp higher than it actually was (below 1%; see Chart 3) had the ratio stood at 80% instead.

Second, the way in which housing was accessed in different municipalities is examined, in order to see how it was affected by the fall in the LTP ratio. The results suggest that, in a municipality in which the LTP ratio fell from 100% to 80%, had this ratio instead remained unchanged at 80% throughout the period under study, both household formation and home ownership would have been lower during the expansion prior to the crisis that began in 2008. As seen in Chart 4, with a constant LTP ratio of 80%, the proportion of under 35s living with their parents in a municipality such as Madrid would have been 2 pp higher in the period 2005-2008. By contrast, the proportion of persons aged 35-44 renting their main residence would have been 1.7 pp higher in that period, and the proportion of home owners would have been 2.8 pp lower (see Charts 5 and 6).

Finally, the need to build up funds to cover the down payment for a house purchase modifies saving patterns over the life cycle; one would expect the characteristics of purchasers to have changed over the period analysed.[4] According to the results, in a municipality in which the LTP ratio fell from 100% to 80%, the probability of a person under the age of 35 purchasing a house would have been 8 pp lower in the expansion leading up to the crisis that began in 2008 had the LTP ratio stood unchanged at 80% (before 2008 this probability was around 40% for the under 35s; see Chart 7). Also, in a municipality in which the LTP ratio fell from 100% to 80%, had this ratio followed a similar path to that observed in Bilbao (unchanged at 80%), the proportion of purchasers with financial wealth of less than one month's income would have been 6 pp less in the pre-crisis expansion (see Chart 8).

In short, access to housing during the period of declining LTP ratios (2008-2012) varied by age group. In the municipalities in which the decline in this ratio was largest, those in the youngest age group reduced their spending on housing and left the family home later, while those in the 35-44 age group resorted to a greater extent to rental. Moreover, the increase observed in the loan rejection rate in municipalities in which these ratios fell most indicates that credit supply factors have played a role in these developments. However, it is important to note that this box does not quantify the relative contribution of supply factors to the fall in the ownership rate, and that demand factors associated with the high levels of instability of the employment and incomes of young people, and with falls in their level of income, may have been operating in this period.[5]

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3 See C. Barceló, E. Villanueva and E. Vozmediano (2020), *Cambios en el acceso de los hogares al crédito hipotecario, 2004-2014,* Working Paper (forthcoming), Banco de España.

4 See Y. Aksoy, H. Basso and C. St. Aubyn (2020), *Time Variation in Lifecycle Consumption and Income,* Working Paper (forthcoming), Banco de España.

5 There is empirical evidence that the employment instability faced by young Spanish people has led to a delay in household formation (see C. Barceló and E. Villanueva (2018), *The Risk of Job Loss, Household Formation and Housing Demand: Evidence from Differences in Severance Payments,* Working Paper No 1849, Banco de España). In the United States, the volatility of the income of the generation born around 1980 has contributed to reducing their rate of ownership (see G. Paz-Pardo (2020), *Homeownership and Portfolio Choice over the Generations,* manuscript, University College of London).

CHANGES IN THE LOAN-TO-PRICE RATIO AND PROPERTY MARKET DYNAMICS (cont'd.)

Chart 5
PROBABILITY OF RENTING MAIN RESIDENCE (35-45)

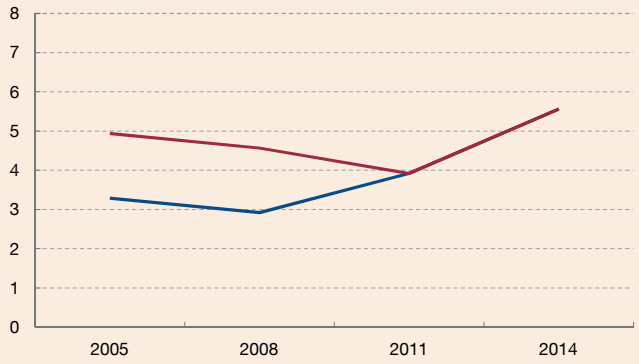


Chart 6
PROBABILITY OF OWNING MAIN RESIDENCE (35-45)

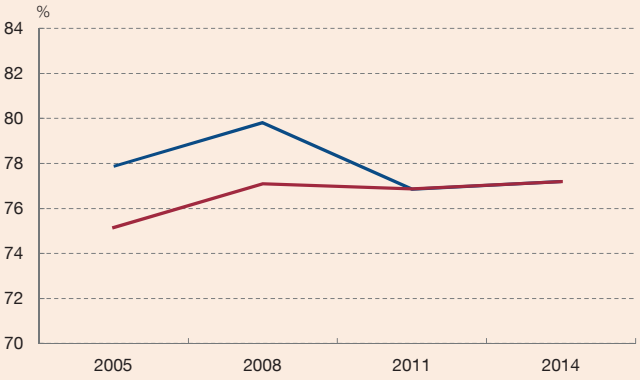


Chart 7
NEW PURCHASERS OF HOUSING: PROBABILITY OF BEING UNDER THE AGE OF 35

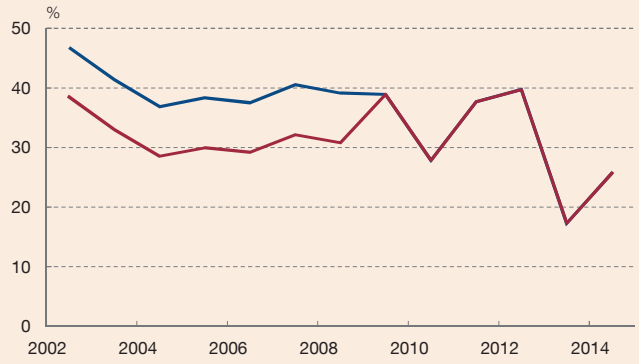
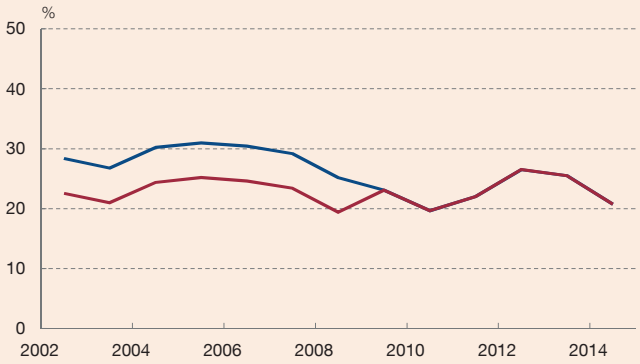


Chart 8
NEW PURCHASERS OF HOUSING: PROBABILITY THAT THEIR FINANCIAL WEALTH IS LESS THAN ONE MONTH OF INCOME



SOURCES: Banco de España, drawing on the Spanish Survey of Household Finances (2002-2014), linked to property registry data.

Box 2

AN ANALYSIS OF THE FACTORS BEHIND THE RECENT CHANGE IN SPANISH HOUSEHOLDS' HOME-OWNERSHIP DECISIONS

As Chart 1 shows, since the 2008 crisis there has been a sharp fall in the proportion of owner-occupier households whose head is under 35 years of age. This box uses the structural model presented in Ferreira, Gálvez and Pidkuyko (2020),[1] aiming to comprehend the factors that might explain this change in trend in the home ownership rate (according to the latest data from the Spanish Survey of Household Finances (EFF, by its Spanish abbreviation), in recent years people are becoming home owners at a later age; see Chart 11 of the main body of the text). In this model, which is estimated drawing on household-level data from the EFF for the period 2002-2005, it is assumed that households make consumption, debt and saving decisions relating to less liquid (housing) and other more liquid assets at different points in the life cycle.

In particular, the model is used to assess the impact on home-ownership decisions of three changes that have occurred following the crisis that broke in 2008. First, the tighter credit conditions for house purchase, primarily through lower maximum leverage offered at the time of loan origination, with the loan-to-price (LTP) ratio at the time of purchase down from 100% during the upturn to 80% during the crisis.[2] Second, the different changes by age group in employment income dynamics observed before and after the crisis: employment income has fallen by between 15% and 25%, according to age group, and the probability of job loss, which varies by age and position in the income distribution, has increased. Lastly, the elimination of the tax credit for house purchase as from 1 January 2013.

Chart 2 presents the patterns by age of the proportion of owner-occupier households obtained by using the model to simulate four alternative scenarios. The first (the continuous blue line) is a model simulation in which the main parameters take values that reproduce certain characteristics similar to those that prevailed in Spain between 2002 and 2007. The second (the continuous red line) is associated with the three changes described in the preceding paragraph (tighter credit conditions for house purchase, expected drop in employment income and elimination of tax incentives for house purchase). The third (the broken red line) is the simulation obtained from maintaining the same characteristics as in the previous case, except for the credit supply conditions which are assumed to be those existing during the expansionary period that preceded the crisis and which, therefore, are looser than those observed in the subsequent period. Lastly, the fourth (the dotted red line) is that simulated when the tax credits are eliminated but the credit conditions and the employment income dynamics remain as they were pre-crisis.

As can be seen by comparing Charts 1 and 2, the model captures reasonably well both the upward pattern of the proportion of owner-occupied households according to the age of the household head and the sharp change observed post crisis (the shift between the blue line and the continuous red line). The comparison between the three red lines seems to indicate that the tighter credit supply conditions and changes in the labour market situation have the most impact on the changes in young people's house purchase decisions. The decline in maximum debt limits has a direct impact on younger households, almost irrespective of their employment income. In turn, changes in employment income, which have an especially acute impact on households over 30 years of age, affect home-ownership decisions through two channels. First, lower expected employment income reduces the possibilities of renting households being able to obtain a mortgage with a limited loan-to-income ratio. Second, for a given consumption level, it implies an increase in the time needed to reach a minimum level of savings that may be used as a down payment for a house purchase.

The simulations also suggest that the elimination of the tax incentive has had a relatively low impact on younger households' home-ownership decisions. This is because when it comes to deciding whether to buy or rent, these households are mainly restricted by their ability to save and their employment status and prospects when the decision is taken, whereas the tax incentive generates liquidity flows especially in the future.

To understand the dynamic that leads to the findings shown in Charts 1 and 2, the behaviour of different household cohorts over time is analysed. Specifically, drawing on EFF data for cohorts born between 1974 and 1986, Chart 3 shows the probability of a household in each cohort owning its main residence in the relevant section of the life cycle.[3] Chart 4 presents the same exercise, but for household cohorts simulated using the model. The findings point to an explanation for the patterns shown in Charts 1 and 2: for households that entered the labour market pre-crisis but did not purchase a home during the upturn (and for households that joined the labour market during the crisis), the decision to buy a home is deferred, owing to the combined effect of tighter credit conditions, the employment income dynamics during the crisis and, to a lesser extent, the disappearance of the tax credit. This is evident by comparing the cohorts simulated in Chart 4. The 1980 cohort series, which comprises households that entered the labour market three to four years before the crisis simulated, shows a break in the series as from the onset of the crisis. Had the crisis not erupted, the series would have continued upward, approaching the point observed for the previous cohort series. The 1986 cohort contains households that joined the labour market during the crisis simulated. This translates into a significantly flatter pattern: at the age of 32, 16% of households in this cohort are owner occupiers, compared with 54% in the 1980 cohort and 76% in the 1974 cohort.

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1 C. Ferreira, J. Gálvez and M. Pidkuyko (2020), "Housing Tenure and Household Debt: Life-cycle Dynamics during a Boom and Bust".

2 O. Bover, M. Torrado and E. Villanueva (2019), "The loan to value ratio for housing in Spain over the period 2004-2016", Analytical Article, *Economic Bulletin,* 1/2019.

3 As the EFF is a rotating panel survey, each household cohort is observed at at least one and at most five points in the life cycle (the 2002, 2005, 2008, 2011 and 2014 waves).

Box 2

AN ANALYSIS OF THE FACTORS BEHIND THE RECENT CHANGE IN SPANISH HOUSEHOLDS' HOME-OWNERSHIP DECISIONS (cont'd.)

Chart 1
HOME OWNERSHIP ACCORDING TO SPANISH SURVEY OF HOUSEHOLD FINANCES (EFF)

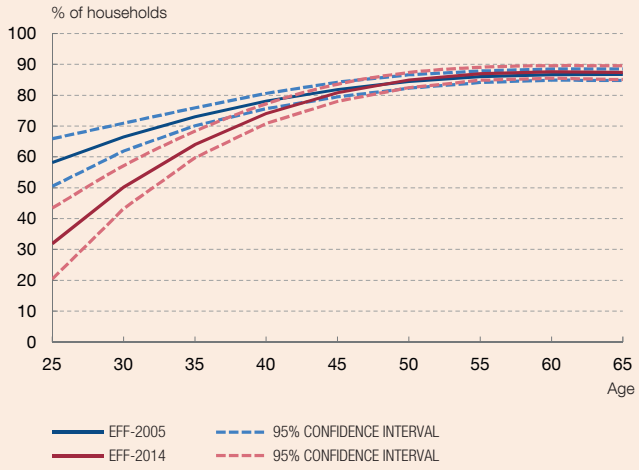


Chart 2
HOME OWNERSHIP. MODEL SIMULATIONS

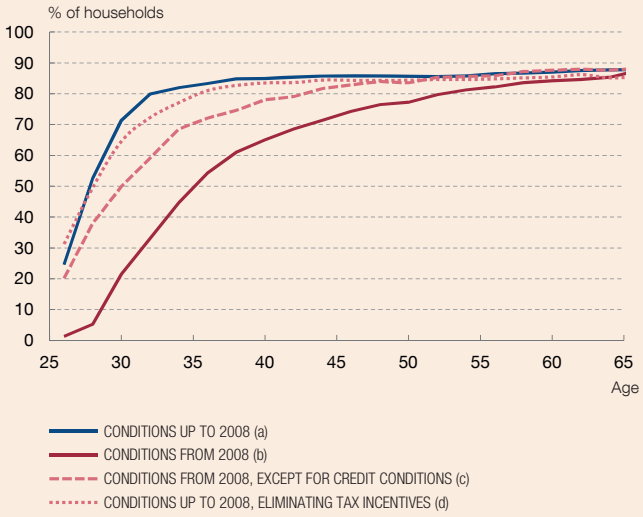


Chart 3
HOME OWNERSHIP BY BIRTH COHORT (EFF) (e)

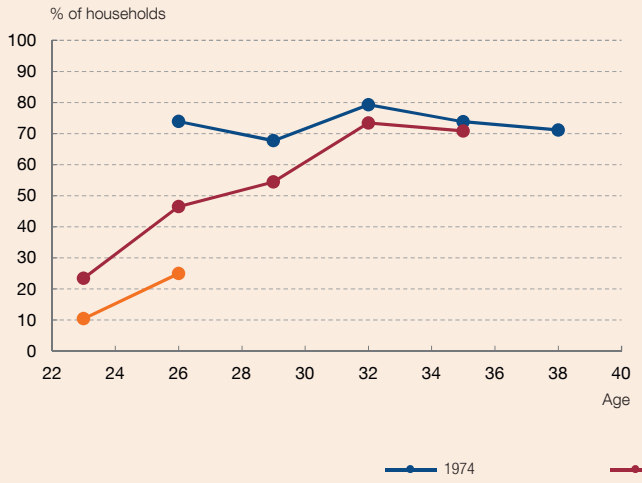
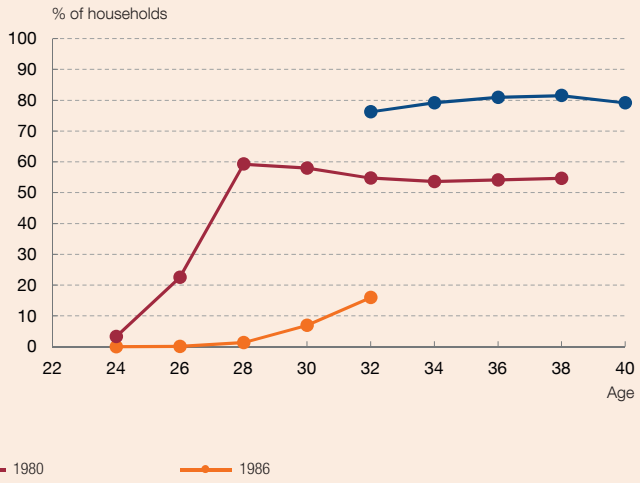


Chart 4
HOME OWNERSHIP BY BIRTH COHORT (MODEL) (e)



SOURCES: Encuesta Financiera de las Familias (EFF) 2005-2014 and Banco de España.

a Assuming the credit conditions, employment income dynamics and tax incentives for house purchase existing before 2008.
b Compared with the pre-2008 situation, assuming tighter credit conditions, deteriorating employment income dynamics and elimination of the tax incentives for house purchase.
c Assuming the credit conditions up to 2008, the employment income dynamics from 2008 and elimination of the tax incentives for house purchase.
d Assuming the conditions up to 2008, except for the tax incentives for house purchase which are eliminated.

Box 3

RECENT HOUSE PRICE DEVELOPMENTS IN ADVANCED ECONOMIES

In recent years, house prices in advanced economies have risen across the board, driven by the economic recovery and the very low interest rate environment which has encouraged house buying, not only as a consumption good but also for investment. Chart 1, which depicts an average house price index, in real terms, for 25 advanced economies, shows that by 2019 house prices had risen above the 2007 highs. It also shows that since end-2017 the year-on-year growth rates have moderated.

However, the situation of the different real estate markets varies considerably, as they are highly influenced by other factors, such as demographics, housing supply elasticity and the characteristics of their respective regulatory and tax frameworks and credit markets.[1]

As Chart 2 shows, in recent years house prices in economies whose real estate markets were severely hit by the crisis have risen significantly (see Group 1 in Chart 2), although in general without

Chart 1
HOUSE PRICES IN ADVANCED ECONOMIES IN REAL TERMS (a)

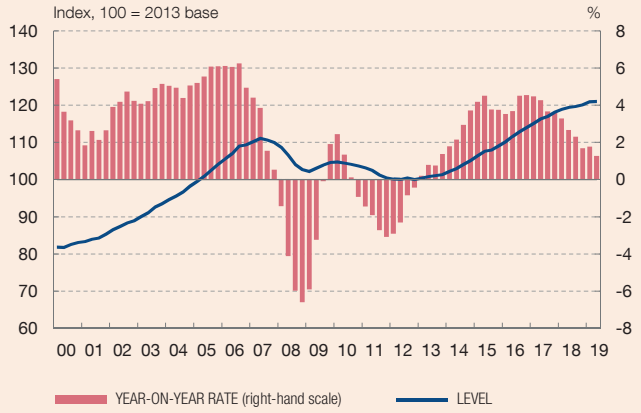


Chart 2
HOUSE PRICES BY GROUPS OF COUNTRIES IN REAL TERMS (b)

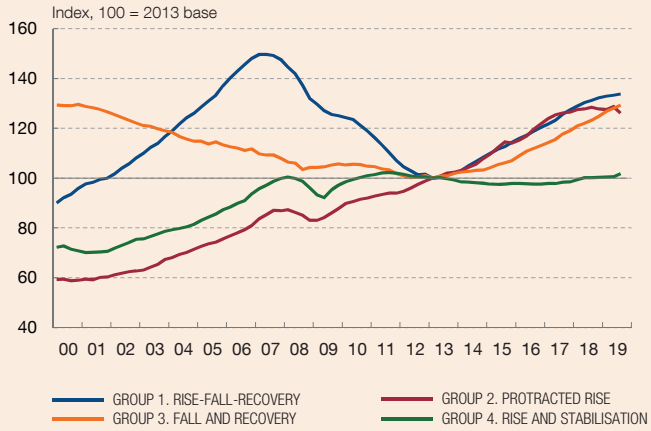


Chart 3
HOUSE PRICE INCREASES BY COUNTRY AND CITY, IN REAL TERMS. AVERAGE ANNUAL CHANGE IN 2013-2019

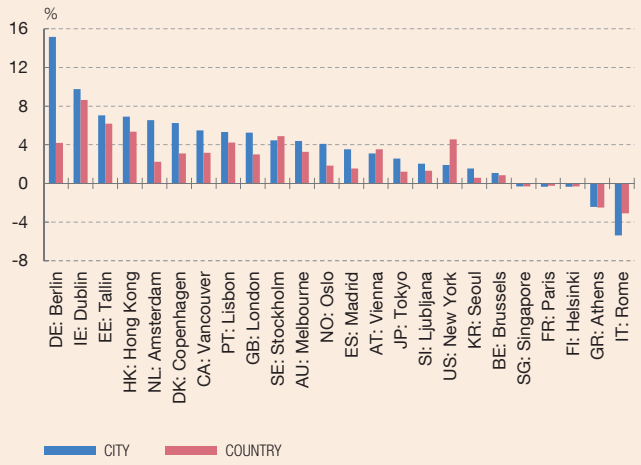
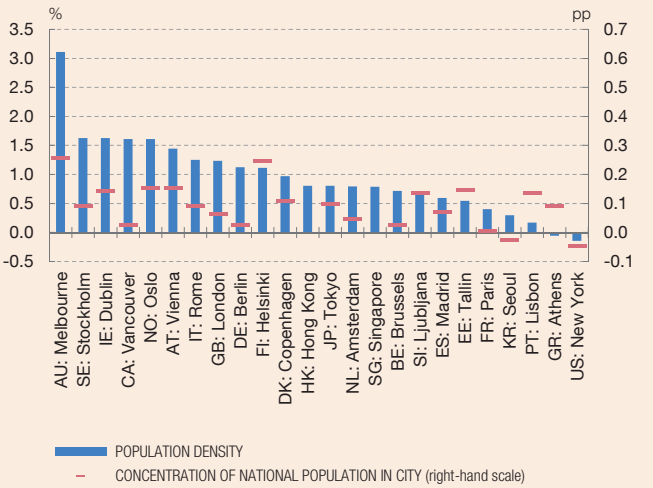


Chart 4
DEMOGRAPHIC PRESSURE IN METROPOLITAN AREAS. AVERAGE ANNUAL CHANGE IN 2013-2019 (c)



SOURCES: ECB, Eurostat, OECD and national statistics offices.

a The index is built as an unweighted average of the house price indices, in real terms, of 25 advanced economies: Denmark, Spain, Great Britain, Ireland, Netherlands, USA, Belgium, Finland, France, South Korea, Singapore, Austria, Australia, Canada, Luxembourg, Norway, New Zealand, Sweden, Switzerland, Hong Kong, Germany, Japan, Portugal, Greece and Italy.
b GROUP 1: Denmark, Spain, Great Britain, Ireland, Netherlands, USA and Greece; GROUP 2: Austria, Australia, Canada, Luxembourg, Norway, New Zealand, Sweden, Switzerland and Hong Kong; GROUP 3: Germany, Japan and Portugal; and GROUP 4: Belgium, Finland, France, South Korea and Singapore.
c The changes are divided between the number of years in the sample. For Austria and Japan the sample is 2013-2018.

1 See Committee on the Global Financial System (2020), *Property price dynamics: domestic and international drivers,* CGFS Papers No 64.

surpassing the highs of the previous boom period. Greece and Italy – not included in the chart – are an exception, as house prices in both these countries have continued to decline in the recent economic recovery phase. The recent upward path is also shared by some countries – such as Austria, Luxembourg or New Zealand – that have seen a very protracted increase in house prices, which barely corrected during the crisis (Group 2). In the case of Germany, Japan and Portugal (Group 3), the long previous downward trajectory in real estate prices has been reversed. Lastly, in countries such as France, Belgium and Finland (Group 4), house prices have steadied at what are relatively high levels in historical terms.[2]

At the local level there is also considerable heterogeneity. As Chart 3 shows for a sample of 24 advanced economies, the most pronounced house price rises have been in the big cities, where housing supply tends to be less elastic, whether owing to limited land availability or regulatory provisions, especially urban development regulations. In this respect, migration to the big cities and the consequent impact observed in most cases on housing demand, could be one of the factors that explain these developments (see Chart 4).

Recent house price movements have led some analysts to establish certain parallels with the pre-crisis situation of a decade ago. There are, however, two differentiating aspects that could curb some of the financial stability risks that arose during the last crisis. As Chart 5 shows, household credit growth has been more moderate in the current cycle than it was pre-crisis. In addition, the prudential regulation of the banking system has been strengthened and new macroprudential oversight frameworks have been developed.[3] Yet there are two factors that have recently received more attention owing to their possible macro-financial implications.

The first is the apparent level of synchrony or correlation between house price movements across countries. Chart 6, which presents a standard measure of synchronicity[4] for 18 countries, shows that in recent decades international house price synchronicity has gradually increased and dispersion has narrowed.[5] The economic literature largely attributes this to greater synchrony in housing demand determinants as a consequence of the economic and financial globalisation process of recent decades – in particular interest rates, which have decreased across the board in advanced economies, down to historically very low levels – and also to greater business cycle synchronicity. Some analysts, such as the IMF

Chart 5
HOUSEHOLD INDEBTEDNESS. DEBT-TO-GDP (a)
QUARTERLY AVERAGE CHANGE

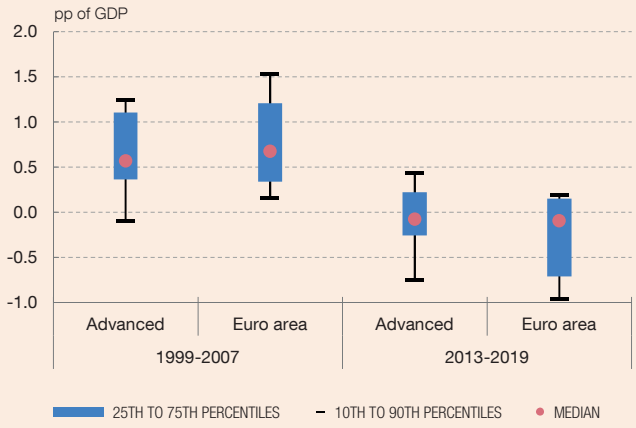
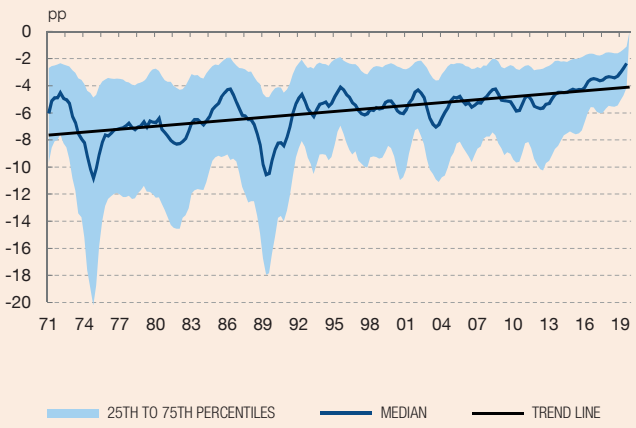


Chart 6
INTERNATIONAL HOUSE PRICE SYNCHRONICITY INDICATOR (b)



SOURCES: BIS, OECD and Banco de España.

a Average quarterly change in debt ratio for each country in the two periods: the first, from 1999 Q4 to 2007 Q4, and the second from 2013 Q1 to 2019 Q3.
b Considering 18 advanced economies: Denmark, Spain, Great Britain, Ireland, Italy, Netherlands, USA, Belgium, Finland, France, Australia, Canada, Norway, New Zealand, Sweden, Switzerland, Germany and Japan. See footnote 4.

2 Indeed, according to the European Systemic Risk Board, these countries have high real estate sector risks. See ESRB (2019), *Vulnerabilities in the residential real estate sectors of the EEA countries*, September.
3 See IMF (2018), "The IMF's Macroprudential Policy Survey. Objectives, design and country responses», *Policy Paper,* April.
4 Synchronicity between two countries is measured by the difference in the year-on-year growth rates of house prices, in absolute terms and with a negative sign. An increase in the indicator denotes greater synchronicity, with the maximum value being zero. For the aggregate measure the median is calculated for all country pairs.
5 Note that although international synchronicity in house prices is growing, it is lower than that observed in GDP or in financial variables. See H. Hirata, M. A. Kose, C. Otrok and M. E. Terrones (2013), *Global House Price Fluctuations: Synchronization and Determinants,* Working Paper No 13/38, IMF. Also, L. J. Álvarez, G. Bulligan, A. Cabrero, L. Ferrara and H. Stahl (2010), *Housing cycles in the major euro area countries,* Occasional Paper No 1001, Banco de España.

(2018),[6] also consider that global financial conditions have played a genuine role in the international synchronisation of house prices, both at country and city level. Indeed, the above-mentioned IMF report indicates that for big cities the growing synchronicity – which has increased in recent years to levels similar to the aggregated country-level indices – may be attributed in part to their greater exposure to global investors, as the enhanced size and liquidity of these markets make them more attractive to investors.

In this respect, a second factor is the role of international investors and the possible direct or indirect influence they may exert on real estate markets[7] and their synchronicity. International investment may help develop and stabilise real estate markets. Yet housing demand by international investors may also give rise to destabilising dynamics, and may excessively heighten demand pressures, potentially creating financial stability risks or hindering access to the housing market for residents. Indeed, some authorities have responded by introducing regulations that limit or raise the price of real estate purchases for non-residents.[8]

In short, although real estate markets are highly influenced by local supply and demand factors, in recent decades the international synchronicity of house prices has grown. This seems to be in response to greater concordance between business cycles and to the prevailing low interest rate environment, in a setting marked by the growing influence of global financial conditions and foreign capital flows. Should it persist, this greater synchronicity of real estate cycles could mean that if house prices were to fall, the effects of this fall and, therefore, the adverse global macro-financial impact, could be more widespread.

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6 IMF (2018), "House Price Synchronization: What Role for Financial Factors?", Global Financial Stability Report, April.

7 As in Australia, Canada and London, and to a lesser extent Paris and Amsterdam. See Committee on the Global Financial System (2020) and L. van Doorn., A. Arnold and E. Rapoport (2019), "In the Age of Cities: The Impact of Urbanisation on House Prices and Affordability", in R. Nijskens, M. Lohuis., P. Hilbers and W. Heeringa (eds.), *Hot Property,* Springer, Cham.

8 As in Canada, Hong Kong, Switzerland, Australia or Singapore. See Committee on the Global Financial System (2020).

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