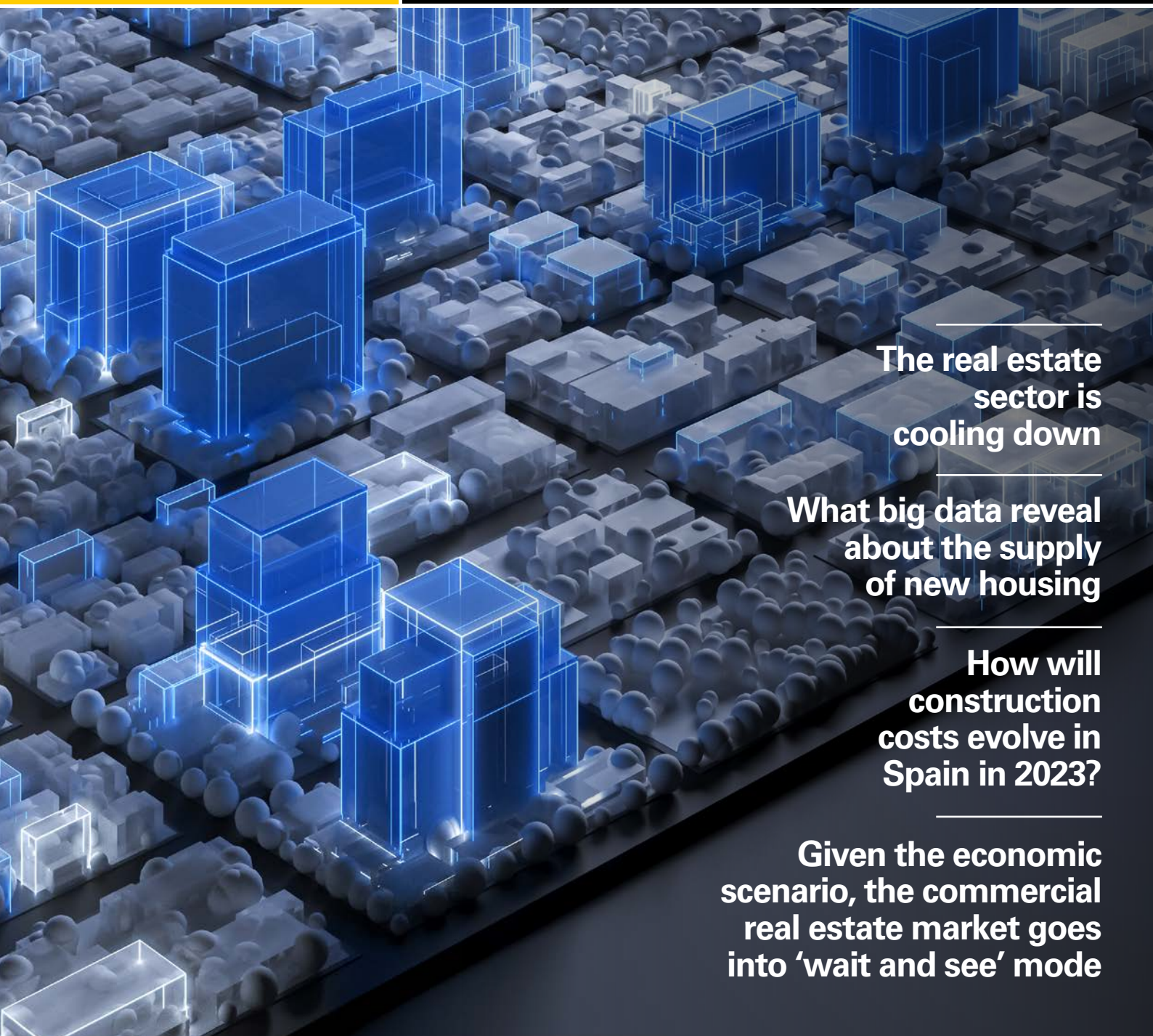


Real Estate

Sector Report

1/2023

**A change in trend for
the real estate sector**



**The real estate
sector is
cooling down**

**What big data reveal
about the supply
of new housing**

**How will
construction
costs evolve in
Spain in 2023?**

**Given the economic
scenario, the commercial
real estate market goes
into 'wait and see' mode**



Sector Report

Real Estate S1 2023 The *Sector Report* is a publication produced by CaixaBank Research

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«The best investment on Earth is earth.»

LOUIS GLICKMAN



Real Estate

CAIXABANK RESEARCH FORECASTS FOR SPAIN'S REAL ESTATE SECTOR



2021	2022	2023		
2.1	5.0	1.0		House prices ¹
566	595	480		Housing sales ²
108	100	100		New building permits ²



2022

- Housing **demand** exceeds all expectations
- The 12-month Euribor hits 3% by mid-December
- **Prices** start to slow down
- The **supply** of new housing is very limited

2023

- **Slowdown** in the real estate sector due to the impact of higher interest rates
- Significant drop in **sales**
- **Construction costs** still above their pre-pandemic level
- **The supply of housing** is lower than net household creation

COMMERCIAL REAL ESTATE MARKET:

SEGMENT	STRENGTHS	WEAKNESSES	SENSITIVITY TO HIGHER INTEREST RATES
 OFFICES	<ul style="list-style-type: none">- Rapid recovery in valuations- Need for new spaces for hybrid working practices- Positive trend in the labour market	<ul style="list-style-type: none">- Greater penetration of telework	 MODEST
 RETAIL	<ul style="list-style-type: none">- Rapid post-pandemic recovery in sales- New requirements for hybrid premises- Cumulative effect of years of sharp adjustments in value and profitability	<ul style="list-style-type: none">- Greater penetration of online shopping- Slow recovery in traffic for shopping centres	 LOW
 INDUSTRIAL AND LOGISTICS WAREHOUSES	<ul style="list-style-type: none">- Solid fundamentals related to supply and demand in the medium and long term- High investor interest due to the boom in digitalisation and the greater penetration of e-commerce	<ul style="list-style-type: none">- Large imbalance currently between supply and demand	 HIGH

Notes: ¹ Data from the Ministry of Transport, Mobility and Urban Agenda, year-on-year change (%). ²Thousands.
Source: CaixaBank Research.

Executive summary

A change in trend for the real estate sector

A year has just ended in which the demand for housing exceeded all expectations. The number of sales had already been growing strongly since the second half of 2021, mainly due to a change in preferences regarding where to live as a result of the pandemic. However, this growth intensified further in the first half of 2022 as buyers brought their purchases forward in order to take out a mortgage at a more favourable fixed interest rate in view of the prospect that the ECB would raise interest rates to deal with galloping inflation.

As expected, in the summer of 2022 the ECB embarked on a cycle of benchmark interest rate hikes, resulting in a steep increase in market interest rates. The 12-month Euribor rose by about 330 bp in 2022 and this will have a direct impact on demand. Specifically, **we forecast a decline in the number of housing sales of about 20%, down to 480,000 homes in 2023**, although this number would still be higher than the average since 2007 (450,000). Likewise, house prices slowed down throughout 2022, a trend we expect to continue in 2023 as a result of waning demand (due to higher interest rates) and a worsening economic outlook. There are also signs of prices becoming less dynamic in some segments in the commercial real estate market (see the article «Given the current economic scenario, commercial real estate market goes into 'wait and see' mode» in this *Sector Report*).

Our scenario for the Spanish economy assumes a pronounced economic slowdown (1% GDP growth in 2023 compared with 4.5% in 2022) but not a recession. In this scenario, we expect **house**

prices to maintain a modest positive growth rate in nominal terms (around 1%). We also still believe there is little risk of any sharp adjustment in the real estate market because the fundamentals are much stronger than in the previous expansionary cycle for Spanish properties: from 2014 to 2022, growth in house prices was moderate (2.2% per year), there is no oversupply (quite the opposite) and, on the whole, no signs have been detected of excessive household debt. We examine these factors in detail in the first article of this Report.

The supply of housing is still very limited and not enough to cover structural demand due to the creation of new households. The second article of this Report («What big data reveal about the supply of new housing and demographic trends in Spain») analyses this shortage in supply using geolocation data from new building permits. It comes as no surprise that the supply of housing is insufficient in those municipalities with the highest population growth, such as large cities, the islands and Mediterranean coastline. This situation is very likely to worsen in 2023 as the economic slowdown, high construction costs and waning demand will restrict growth in housing supply. In the article «How will construction costs evolve in Spain in 2023?» we demonstrate that, provided there are no new shocks and considering the trend observed in industrial metal prices on international markets and futures prices of the London Metal Exchange (LME) index, **construction costs in Spain will tend to fall in 2023, although they should still remain above their pre-pandemic level.**



Situation and outlook

The real estate sector is cooling down

After a year in which demand for housing exceeded all expectations, in 2023 we predict that the number of sales will adjust significantly, mainly due to the impact of higher interest rates. House prices, which tend to respond rather slowly to any fall in demand, will slow markedly although we expect them to maintain a slightly positive growth rate in 2023 (albeit adjusting in real terms due to high inflation). The supply of housing, which is insufficient to meet structural demand due to the creation of new households, will remain very limited as a result of the economic slowdown, high construction costs and waning demand.

Signs of a cooling real estate market are becoming increasingly evident

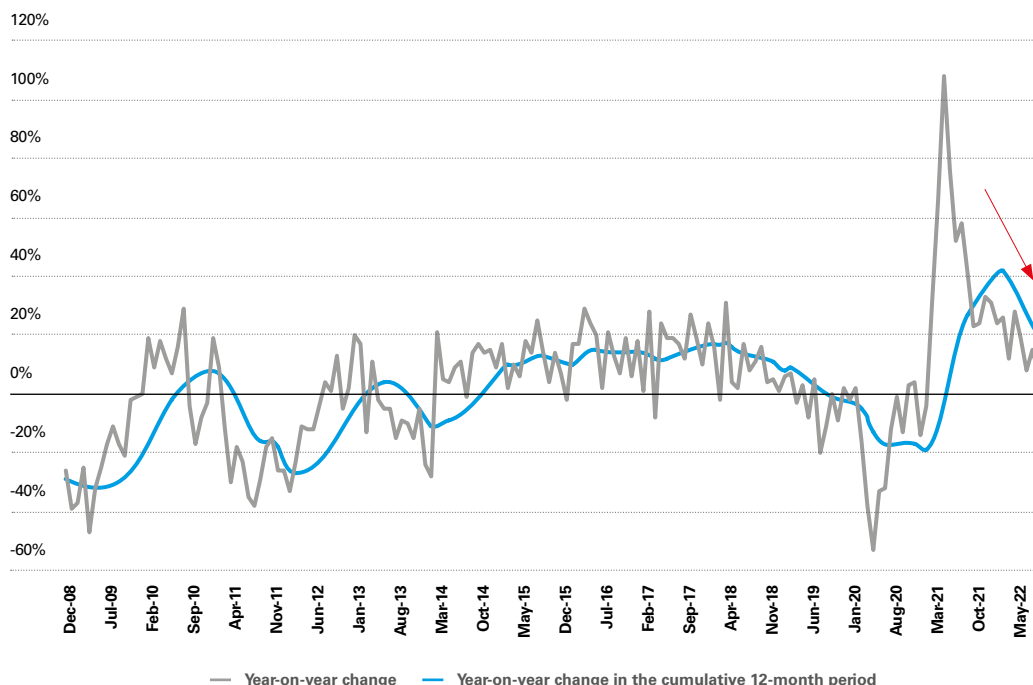
Demand for housing was surprisingly dynamic in 2022. The upward trend that began in 2021 continued into the first half of 2022, boosted by several factors such as a change in preferences following the pandemic (working more from home, more spacious properties, etc.), «forced» savings during the lockdown that have partly been invested in real estate, very low interest rates and the rapid recovery in foreign demand.

Demand continued to grow strongly during the summer but the first signs of a cooldown (more modest growth rates) began to be perceived due to the exhaustion of the expansionary cycle, the first interest rate hikes and, above all, expectations that the ECB would continue to raise interest rates over the coming months. Indeed, some buyers brought forward their home purchases so they could take out a mortgage at a more favourable fixed rate before interest rates rose further. The combination of all these factors has pushed sales of housing up to very high figures (644,000 sales in the 12 months up to September 2022), figures not seen since the summer of 2008.

The first signs of demand cooling down have begun to be perceived, due to the exhaustion of the expansionary cycle and interest rate hikes

Sales of housing are starting to slow down

Year-on-year change (%)



Source: CaixaBank, based on data from the National Statistics Institute.

Despite these excellent figures, over the coming months housing demand will wane due to the impact of higher interest rates.¹ The 12-month Euribor (the main benchmark for variable rate mortgages) rose by about 330 bp in 2022 (from -0.45% in January to 2.83% in November)² and, on average, implied market interest rates are expected to remain around 3% (or slightly below) in 2023. Since most buyers tend to require financing to purchase a home, this will directly impact on demand. We therefore forecast that the number of sales will decline by around 20% in 2023 to 480,000 homes, although this level would still be higher than the average since 2007 (450,000).

Foreign demand, on the other hand, may also be affected by the economic slowdown in the countries of those nationals who tend to buy most property in Spain (the United Kingdom, Germany and France). Nevertheless, the most recent data are extraordinarily positive: foreign nationals bought more than 90,000 homes in Spain in the four quarters up to Q3 2022, accounting for 14.1% of all sales and far exceeding the pre-pandemic values.³

① The ECB raised interest rates by 200 bp between July and October 2022 and we expect it to raise them by a further 100 bp up to Q1 2023, bringing the depo rate to 2.5% and the repo rate to 3%.

② This increase in the 12-month Euribor pushes up variable rate mortgages significantly. To address this situation, the Spanish government has reached an agreement with the banking sector to update and extend the Code of Good Practices and provide relief for the most vulnerable mortgagors and those at risk of becoming vulnerable.

③ Data from the College of Registrars.



Real Estate

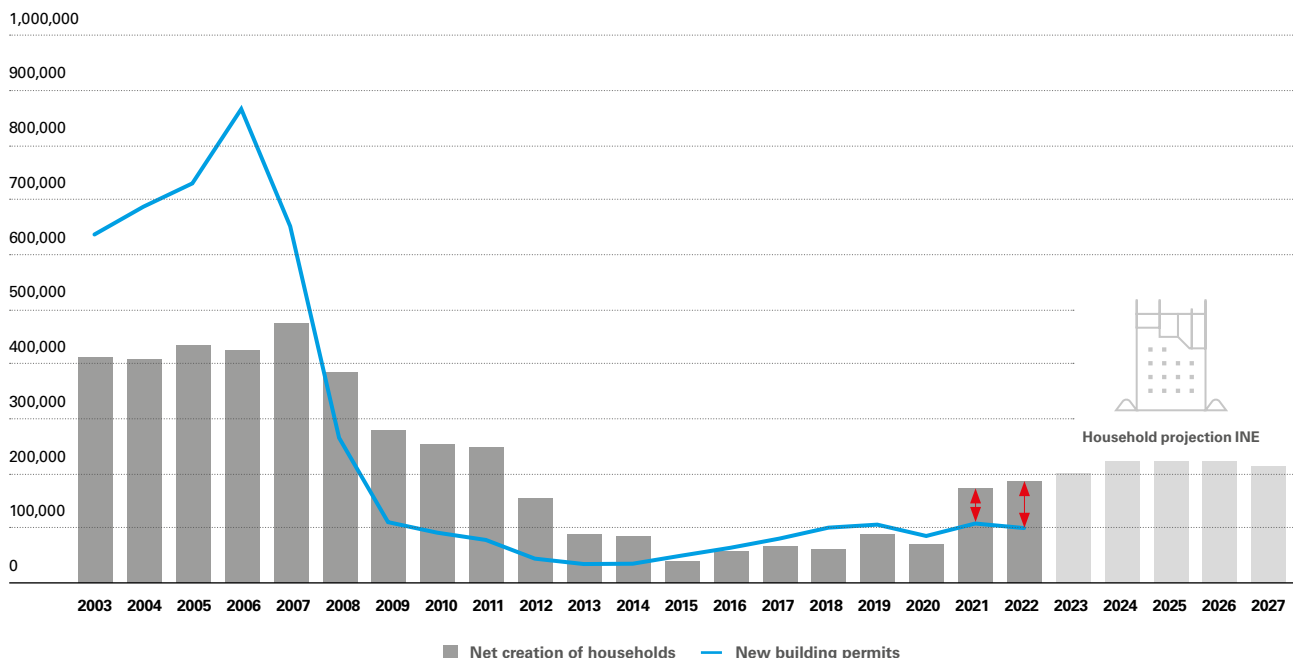
The supply of housing is still very limited

The number of new building permits (108,000 homes in the 12 months up to September 2022) is much lower than the net creation of households (207,000 per year up to Q3 2022), data that suggest housing supply is insufficient in relation to structural demand due to population growth. This lack of supply to meet structural demand due to demographics is an aspect discussed in the article «What big data reveal about the supply of new housing and demographic trends in Spain» in this *Sector Report*.

One factor limiting the post-pandemic recovery in supply has been the sharp increase in construction costs, as well as certain inputs being in short supply and growing labour shortages. Recently, the upward trend in costs appears to have slowed (14.7% year-on-year in September, down from a peak of 19.5% in May) and the decline in industrial metal prices on international markets points to construction costs moderating in 2023, although they will be higher than before the pandemic. For more details, see the article «How will construction costs in Spain evolve in 2023?» in this Report.

The economic slowdown, high construction costs and waning demand will restrict growth in the supply of in 2023

The production of new homes was lower than net household creation in 2021 and 2022



Notes: Data on the number of households are from Spain's Labour Force Survey (LFS) except for the period 2014-2019 (Continuous Household Survey). The growth in households recorded by the LFS in the first three quarters has been extrapolated for 2022 as a whole. As of 2023, the data correspond to the household projection by the National Statistics Institute (INE).

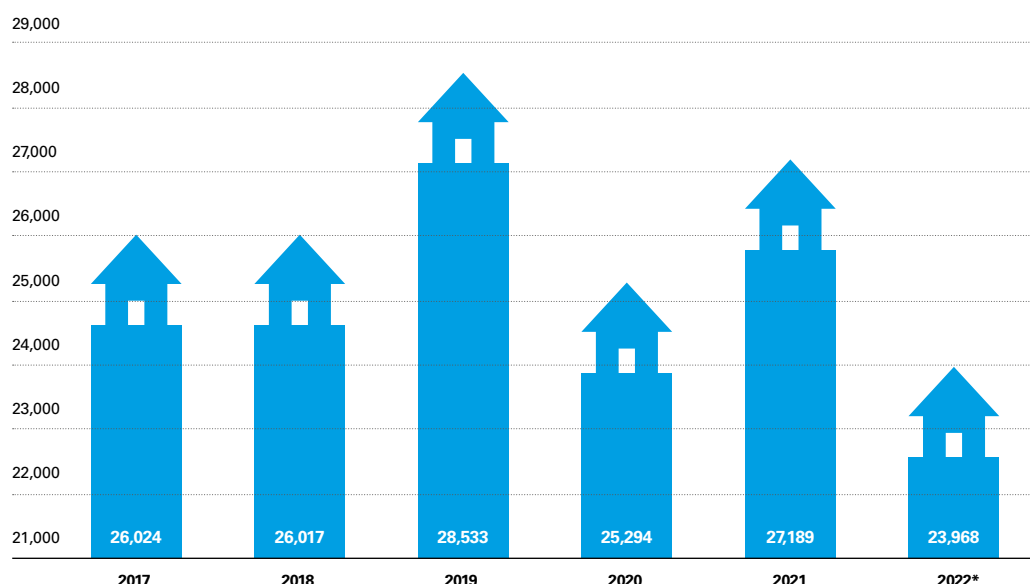
Source: CaixaBank Research, based on data from the Ministry of Transport, Mobility and Urban Agenda and the National Statistics Institute.

However, the worsening economic outlook and other more structural factors (such as the lack of residential land in the zones most in demand and regulatory uncertainty) suggest that supply will remain stable in the short and medium term. As a result, we expect new building permits to decline moderately in 2022 as a whole (100,000 homes) and to remain at similar levels in 2023. Again, this figure is clearly lower than the National Statistics Institute's projection of new households (217,000 per year on average between 2023 and 2027). In addition to new builds, the renovation of existing housing should gain momentum as projects linked to the European NGEU reconstruction funds are implemented. However, for the time being the number of permits granted to renovate housing up to September 2022 was 11.8% lower than the same period in 2021.⁴

④ As of 31 October 2022, the already pledged expenditure of the renovation programme was less than 5% of the €1,389 million budget.

The renovation of housing does not seem to be growing despite the deployment of NGEU funds

Number of permits to renovate housing



Note: The reduction recorded between January and September 2022 (-11.8%) has been extrapolated to estimate the figure for 2022 as a whole.

Source: CaixaBank Research, based on data from the Ministry of Transport, Mobility and Urban Agenda.

The growth in house prices has started to moderate but we don't expect any sharp adjustment

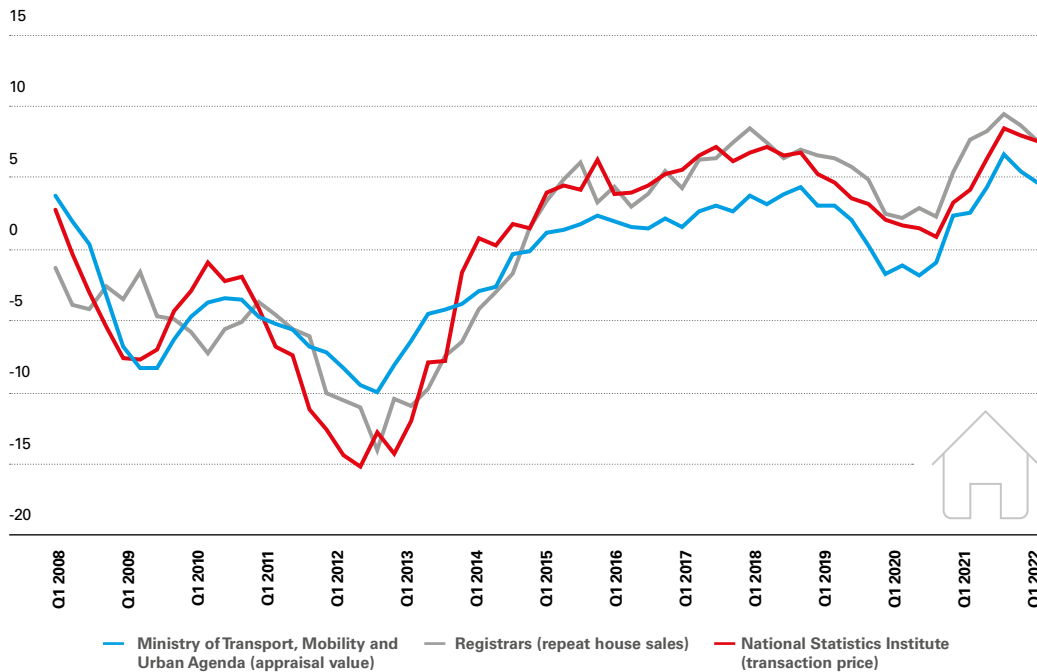
House prices started to moderate even before there were clearer signs of demand cooling down. The different price indexes for Spain's residential market show year-on-year growth going from between 6.7%-9.5% in Q1 2022 (depending on the index) to 4.7%-7.6% in Q3 2022, as can be seen in the chart below. There are also signs of less dynamic price growth in some segments of the commercial real estate market (see the article «Given the current economic scenario, the commercial real estate market goes into 'wait and see' mode» in this Report). Despite this slowdown, it is worth noting that growth rates remain considerable and, up to Q3 2022, house prices were still supported by very strong demand.



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House prices are beginning to moderate

Year-on-year change (%)



Source: CaixaBank Research, based on data from the Ministry of Transport, Mobility and Urban Agenda, National Statistics Institute and College of Registrars.

If we look at the cumulative growth in house prices between Q4 2019 and Q3 2022 (latest available data), we can see that the highest growth rates were recorded in provinces popular with tourists, such as Cadiz (9.2%), Malaga (12.6%), the Balearic Islands (10.4%) and Alicante (7.4%).⁵ The exit from the pandemic and the strong recovery in international tourism have therefore helped the real estate markets in these tourist areas to grow more vigorously. On the other hand, **there has been a generalised slowdown in house prices over the course of 2022 across all regions**, including those that are popular with tourists, this being due to common factors affecting the housing market as a whole, such as rising interest rates.

⁵ Data from the Ministry of Transport, Mobility and Urban Agenda.

We believe this slowdown in house prices will become more pronounced in the final part of the year and in the first few quarters of 2023, coinciding with the period when economic activity is likely to stagnate. After this difficult winter (due to the energy crisis and high inflation), heading into spring we expect GDP growth to pick up again, albeit modestly. Consequently, for 2023 as a whole we forecast 1% growth in Spain's GDP (4.5% in 2022) and an average of 4.5% inflation (still high but much lower than the 9.1% recorded in 2022). We also expect jobs will continue to be created (0.5%, around 112,000 more employees as an annual average) although the unemployment rate may rise slightly due to a larger labour force. Within this scenario of pronounced economic slowdown but not recession, we expect **house prices will maintain a modestly positive growth rate in nominal terms** (around 1%), although the adjustment will be considerable in real terms due to high inflation (-7.1% cumulative in 2022-2023). We also still believe there is little risk of any sharp adjustment in the real estate market because the fundamentals are much stronger than in the previous expansionary cycle of Spain's real estate market. Let's look at this in more detail.



In the current expansionary cycle of Spain's real estate sector (2014-2022), no imbalances have accumulated that could lead to a sharp correction in the sector

The economic literature identifies two major factors in the formation of real estate bubbles in an expansionary phase, which also determine the severity of the correction in the subsequent stage (when the bubble «bursts»). The first of these factors is **how sharply house prices rise in the expansionary phase**, particularly if this growth is not supported by structural factors (demographics, household income, etc.). The second factor is the **increase in credit to households to purchase a home**, which is normally accompanied by a relaxation of requirements to be granted a loan on the part of financial institutions (a credit boom). When households are excessively in debt, they are more vulnerable to any loss of value in the property underlying such debt. In addition to these two factors, the severity of the adjustment also depends on whether a large stock of unsold new housing has accumulated (in which case the period required subsequently to «digest» this stock is longer, limiting the recovery in the construction sector).

The table below compares the trends in different variables related to these factors in the two most recent expansionary cycles of Spain's real estate market (1999-2007 and 2014-2022). It is evident that these expansionary stages have little in common. In the first expansionary cycle, housing appreciated by 154% in 8 years (12.3% per year) while, in the second, prices grew by 19% in 8 years (2.2% per year). Similarly, there was considerable growth in credit to households to purchase a home in the first cycle (20% per year), with household debt as a percentage of GDP increasing by 39.7 pp and the number of mortgages reaching 1.24 million in 2007 (1.75 mortgages were signed for every sale). In terms of supply, 5.6 million building permits were approved in the period 1999-2007, which represents 1.6 dwellings for every new household created in the same period, exemplifying the construction boom taking place.






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The panorama for the 2014-2022 period is quite different. During this expansionary cycle, households deleveraged extensively (debt fell by 19.5 pp of GDP), credit for construction and development declined, there was no excess supply (0.9 permits for each new home) or excessive growth in credit (although the number of new loans being granted is growing strongly, this is barely enough to maintain the outstanding balance of mortgage credit), and the requirements to be granted a loan were not relaxed (8.9% of mortgages with LTV >80%). Moreover, the high percentage of fixed rate mortgages granted in recent years limits the impact of rising interest rates on newly mortgaged households (which tend to have a higher LTV).

The affordability ratio (house price over median household income) warrants particular attention as this has increased steadily since 2014 (rising to 8.2 in 1.5 years). The Bank of Spain has also noted a larger concentration of high loan-to-disposable-income ratios among lower income households, which may be more vulnerable to any macroeconomic risks that materialise.

Comparison of the key factors in the last two expansionary cycles of Spain's real estate market

	VARIABLE	METRIC	1999-2007	2014-2022
PRICE 	House prices (nominal)	Average annual change	12.3%	2.2%
	Affordability ratio (house price/income)	Cumulative change in pp of income	5.4	1.5
SUPPLY 	Residential investment (real)	Average annual change	7.4%	2.6%
	Number of new building permits	Total over 9 years	5,650,000	730,000
	Permits per new home	Ratio	1.6	0.9
CREDIT 	Household debt	Change in pp of GDP	39.7	-19.5
	Number of mortgages	Last year (2007, 2022)	1,238,890	457,015
	Number of mortgages per sale	Last year (2007, 2022)	1.75	0.78
	Credit to purchase housing (outstanding balance)	Average annual change	20.0%	-1.5%
	Credit to the real estate development and construction sector (outstanding balance)	Average annual change	31.1%	-9.4%
	New mortgage loans	Last year (2007, 2022), million euros	145,297	65,443
	Percentage of loans with LTV >80%	Last year (2007, 2022)	14.3%	8.9%
	Percentage of fixed rate mortgages	Last year (2007, 2022)	4%	66%

Notes: Data from 2022 up to the latest available. LTV indicates loan-to-value. Percentage of fixed rate mortgages calculated based on the value of the loan (Bank of Spain).

Source: CaixaBank Research, based on data from the Ministry of Transport, Mobility and Urban Agenda and the National Statistics Institute.

Although we don't expect any significant price corrections for Spain as a whole, there may be some adjustment in those markets where prices have grown more strongly in recent quarters and whose prices are more overvalued in relation to the fundamentals. On the other hand, prices will hold up better in the most sought-after locations, such as the centre of large cities and tourist destinations. We also predict different trends for different types of housing: second-hand housing will be the most affected while new builds will probably perform better due to their relative scarcity and high demand.

In the short and medium term, the slowdown in house prices could intensify if certain downside risks materialise

However, a somewhat more generalised price correction could occur should some downside risks materialise⁶. But even in this alternative scenario, the absence of significant imbalances suggests that no financial mechanisms with a negative effect would be activated and the potential impact on bank balance sheets would be contained, both because of the low level of overvaluation in the market⁷ and also prudent mortgage lending conditions. Nevertheless, supervisory authorities have recently warned that risks to financial stability have increased, although macroprudential measures are not deemed necessary at this stage.⁸

The rental market: how long will the upward trend last?

Based on internal CaixaBank data regarding rent payments (duly anonymised and processed in aggregate using big data techniques), we have constructed indicators for the annual trend in rent prices at a national level and for the different autonomous regions. We have also calculated indicators for «new rents» by selecting payer-issuer relationships that are six months old or less, with the aim of capturing any changes in trend occurring in the market. The charts below show that rents rose very sharply before the pandemic (2018-2019) but slowed markedly in 2020, while in 2021 and 2022 the average growth in rent prices was contained (less than 2%).⁹ However, very significant differences can be observed between high and low value rents: new high rents (75th percentile) grew by more than 4% on average, twice as much as lower rents. There are also considerable differences across the autonomous region, with the Community of Madrid posting the largest growth in 2022, above 6% on average.

⑥ One relevant risk is that the ECB may be forced to tighten financial conditions more than we have assumed in our main scenario.

⑦ According to the Bank of Spain's Financial Stability Report for Autumn 2022, the indicators for price imbalances in this market show signs of contained overvaluation.

⑧ Bank of Spain Financial Stability Report, Autumn 2022.

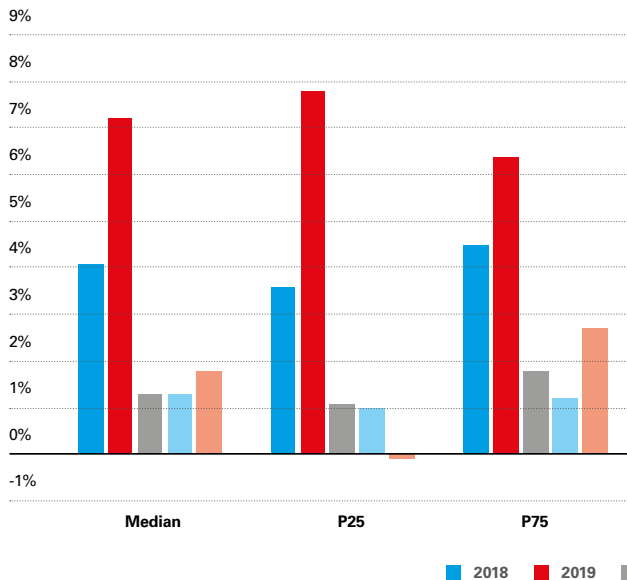
⑨ In March 2022, the government imposed a 2% cap on rent increases upon lease renewal.



CaixaBank index of rental prices in Spain

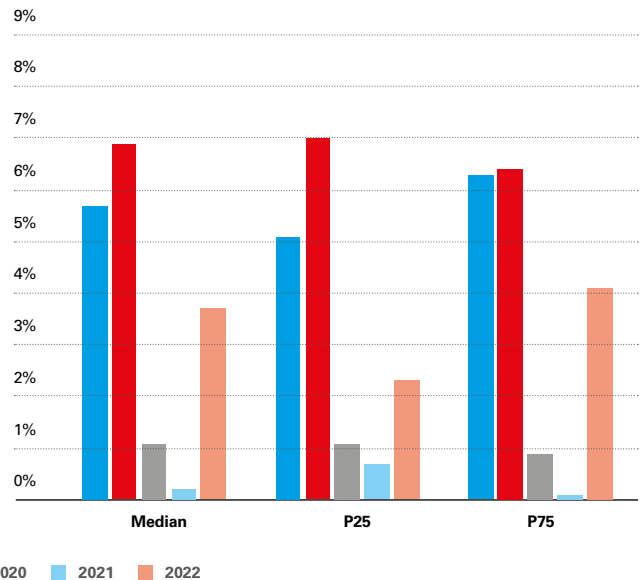
Total rentals

Annual change (%)



New rentals

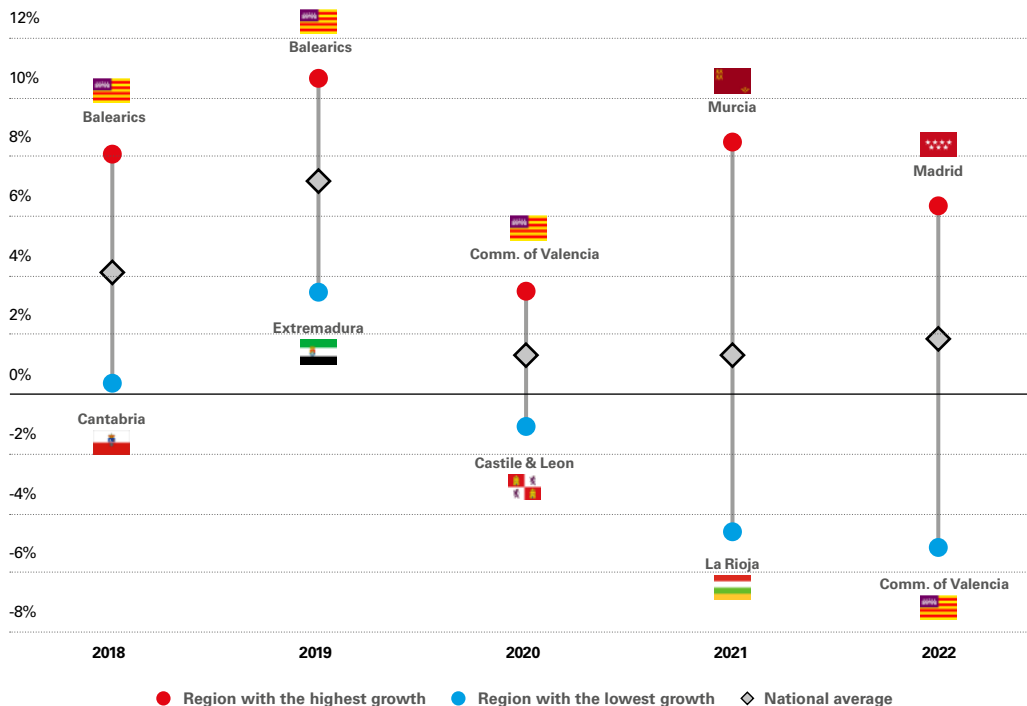
Annual change (%)



Notes: Three indicators have been calculated for the rental price based on the average value, the 25th percentile and the 75th percentile of total payments for rents and for the subgroup of new rents (rents whose issuer-payer relationship is less than or equal to six months). Data for 2022 from January to October.
Source: CaixaBank Research, based on internal rent payment data.

CaixaBank index of rental prices by autonomous region

Annual change (%)



Note: Data for 2022 from January to October.
Source: CaixaBank Research, based on internal data.



Within a context of high inflation, which is eroding the purchasing power of households, it seems there is little room for rents to rise further

Looking ahead to 2023, the trend in rental prices is uncertain as there are factors pushing in both directions. On the one hand, there has been a considerable cumulative rise in rental prices in recent years (except for a pause during the pandemic), larger than the growth in household income, making it significantly harder for many families to pay their rent. Within a context of high inflation, which is eroding the purchasing power of households, it therefore seems there is little room for rents to rise further. In addition, it is very likely that the 2% cap on rent increases will be continued in 2023. However, the pressure from demand may be even greater than in recent years, as rising interest rates make it more difficult to buy a home, pushing a larger proportion of the population into the rental market. Although the supply of rental housing is expected to increase in the medium term, supported by investor interest in this segment (co-living, build to rent, etc.), it is unlikely to be enough to meet the growing demand.



Digital market analysis

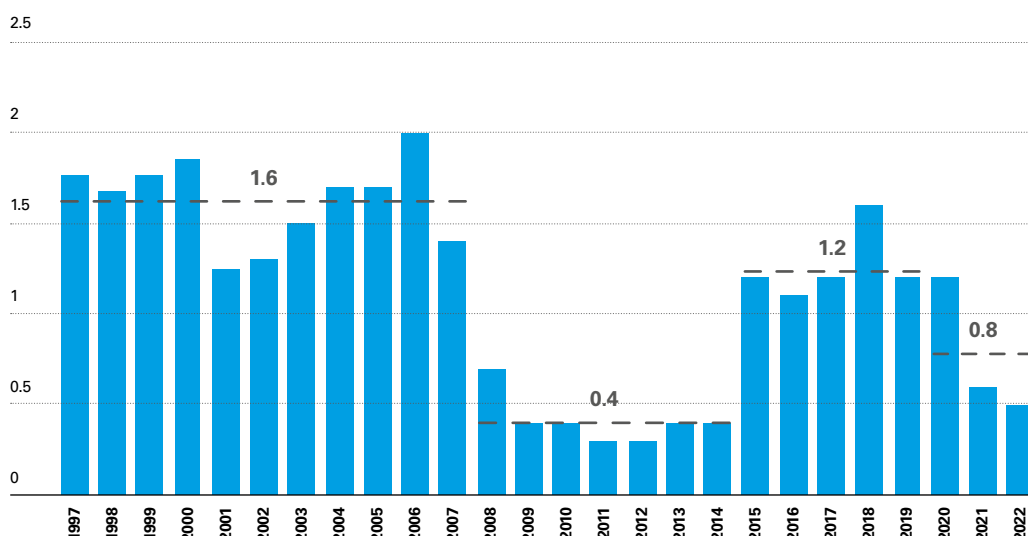
What big data reveal about Spain's supply of new housing and demographic trends

Between 2020 and 2022, around 420,000 new households were created in Spain. During the same period, the number of new homes started barely reached 300,000, the lowest level since 1990 except during the financial crisis that began in 2008. This supply of housing, which is insufficient in relation to the demographic situation, is more pronounced in those municipalities whose populations are growing the most, such as large cities, the islands and the Mediterranean coastline. According to population projections by the National Statistics Institute, about 217,000 new households will be created per year over the next five years (2023-2027), representing significant demographic pressure and with important implications for the housing market.

The demographic trends of a country or population is the main determining factor regarding the long-term structural demand for housing in that country or population. Both variables may differ at certain points in time but notable imbalances may arise when divergence occurs over long periods of time, either due to an excess of supply, which can give rise to a large stock of unsold housing (as happened in Spain in the years before the real estate bubble burst in 2008), or due to an **insufficient supply to cover structural demand for housing due to the formation of new households**. As we will see in this article, this is currently the situation in Spain's real estate market and, more specifically, in large cities and some coastal areas.

Starting with an analysis of Spain as a whole and taking a broad perspective in terms of time, the chart below outlines the number of building permits for each new household created since 1997. It shows the construction boom between 1997 and 2007, with an average of 1.6 new homes for every new household created. During this period, residential investment as a percentage of GDP almost doubled: from 6.2% of GDP in 1997 to 11.8% in 2006. This imbalance (oversupply) led to the accumulation of a large stock of unsold new housing, which reached a peak of 650,000 homes in 2009 according to estimates by the Ministry of Transport, Mobility and Urban Agenda.

Number of building permits for each new household created



Annual average	1997-2007	2008-2014	2015-2019	2020-2022
Permits	583,226	94,131	80,304	97,951
New households	362,556	215,186	64,520	144,172

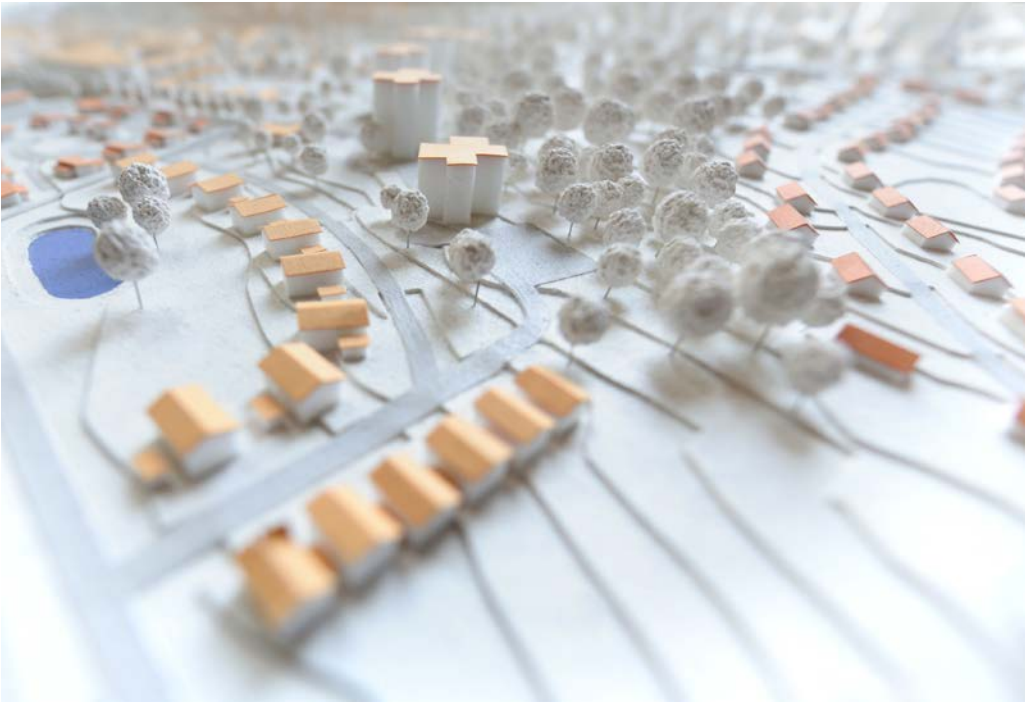
Notes: Data regarding the number of households come from the Labour Force Survey (LFS), except for the period 2014-2019 (Continuous Household Survey). The growth in households recorded by the LFS in the first three quarters has been extrapolated to estimate 2022 as a whole.

Source: CaixaBank Research, based on data from the Ministry of Transport, Mobility and Urban Agenda and the National Statistics Institute.

The need to absorb this large stock meant that relatively little new housing was built between 2008 and 2013, a period that saw an intense adjustment in house prices and capacity in the sector. In 2014, the real estate market began to pick up again, with the first positive developments in terms of price and sales. However, growth in the supply of new housing remained very limited in the first year of this new expansionary cycle because of the still considerably large stock that needed to be absorbed (estimated at more than 500,000 homes in 2014) and Spain's low population growth (86,000 new households in 2014).¹⁰ Between 2015 and 2019, although household formation remained very low (about 64,500 households per year), the production of new housing gained momentum, rising from 64,000 new building permits in 2015 to 106,000 in 2019. This once again raised the number of building permits per new household created to above 1, despite the fact that the stock of unsold new housing was still very large (457,000 homes estimated in 2019). However, much of this stock is now considered obsolete or is located in areas with very low demand.

¹⁰ Household data from 2014 to 2019 come from the Continuous Household Survey. For all the other years, from the Labour Force Survey.

The supply of housing in Spain is currently not enough to cover structural demand, based on the most recent household formation figures



In the most recent period (2020-2022),¹¹ first as a result of the pandemic and then due to the rise in construction costs, once again the supply of housing was not enough to meet the demand of a population that was growing more quickly. Consequently, in the past three years about 420,000 new households have been created in Spain¹² but the number of new builds started has barely reached 300,000.¹³ The chart below shows where the lack of supply is most keenly felt in relation to demographic trends: namely, in those municipalities with the highest population growth, such as large cities and some coastal areas.

Which municipalities are most in need of housing?

It is a well-known fact that Spain's population is distributed very unevenly throughout the country. In fact, geographic differences have become even greater over time as people tend to move to areas with more job opportunities and a more dynamic economy.¹⁴ This phenomenon of even more people moving to highly populated areas creates additional pressure for housing demand in real estate markets that are usually already quite (or very) stressed. For this reason, it would be convenient for residential construction to concentrate on responding to this demand, either by building in more demographically dynamic municipalities or in nearby zones. This latter case may also require means of transport to be developed that can bring some zones closer to others in terms of travel time.

¹¹ The years 2020 and 2021 should be analysed together due to the distortions caused by the pandemic.

¹² Increase in the number of households between Q3 2019 and Q3 2022 according to the LFS.

¹³ The cumulative total of new building permits between October 2019 and September 2022 was 296,000 while the total new builds started between July 2019 and June 2022 was 304,000.

¹⁴ Between 2011 and 2021, the resident population in Spain increased by 584,882 inhabitants. However, half the provinces reduced their number of residents and 7 out of 10 municipalities with more than 10,000 inhabitants lost population (census data, National Statistics Institute).

To analyse this issue, we have used a new detailed database of new building permits with their geolocation details,¹⁵ which allows us to cross-reference the exact location of each new housing development with the demographic trends in that zone. Specifically, for each location (municipality or district), we have calculated a metric, which we call the «imbalance», that measures the relative shortage of housing based on a comparison between the cumulative number of new building permits between 2020 and 2022 and the net creation of households over the same period. This metric ranges between +1 and -1. Positive values (closer to 1) indicate the creation of more households than new homes started; i.e. insufficient housing supply, while negative values indicate that construction has started on more homes than the number of new households created.¹⁶

The maps below show the findings of these calculations. It is evident that the municipalities that do not have enough supply of new housing in relation to their household formation are spread along the Mediterranean coast, on the islands and around the large urban centres, especially Madrid (imbalance of 0.42) and Barcelona (0.46) although very high values can also be observed for other highly populated cities such as Murcia (0.53), Terrassa (0.49), La Coruña (0.42), Vigo (0.41), L'Hospitalet de Llobregat (0.40), Sabadell (0.34) and Zaragoza (0.25). Nevertheless, this does not mean that no construction is taking place in these municipalities. Indeed, if we divide the municipalities into those with a housing shortage (imbalance >0) and the rest, we can see that 51% of new building permits in the past three years have been given in municipalities with a housing shortage. However, these municipalities concentrate 61% of Spain's population and 96% of the country's new households created between 2020 and 2022. In other words, although a significant part of new housing developments are located in highly dynamic municipalities in demographic terms, this increase in supply is not enough to cover the booming demand.¹⁷

¹⁵ Database from DoubleTrade – Construdatos.

¹⁶ Specifically, we define the metric as:
$$\text{Imbalance} = \frac{(\text{new households} - \text{permits})}{(\text{new households} + \text{permits})}$$
 We have used three years of cumulative household and permit data (2020-22) to avoid the distortions in the data caused by the pandemic.

¹⁷ This result is confirmed by a linear regression of the imbalance related to the number of people and the growth in the number of households. In both cases, a positive significant coefficient is obtained.

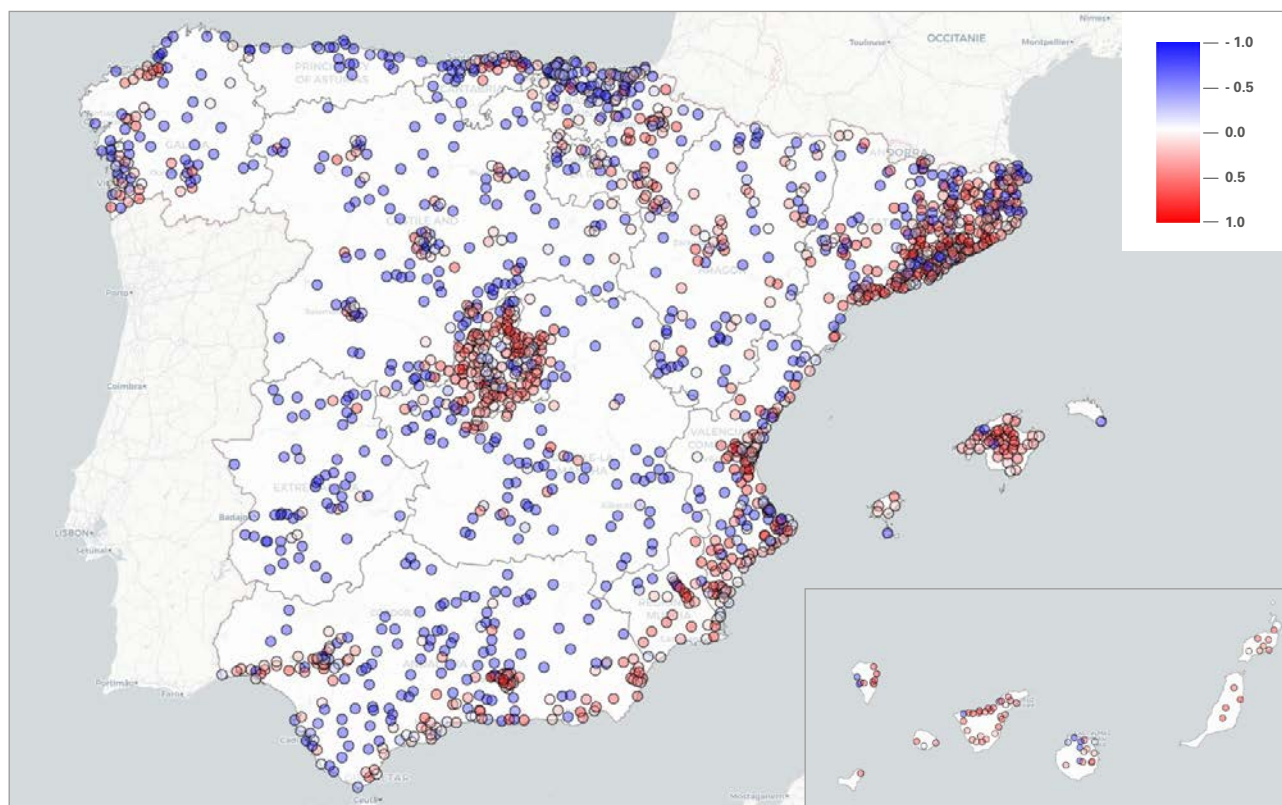
More housing is being built where there is more demand but it's still not enough: the more dynamic municipalities in demographic terms are those with the greatest shortage of new housing

On the other hand, it is important to note that in those locations where the number of new homes started exceeds household creation (imbalance <0), no significant imbalance related to «oversupply» has been detected: the differences are not very big in general and tend to be observed in relatively small municipalities (with a small number of new builds started in absolute terms). It should also be noted that the metric used does not take into account other determinants of demand, such as demand for second homes (domestic and foreign), temporary demand (from travelling workers, students or tourists) or demand in order to replace obsolete housing (housing depreciation).



Which municipalities are most in need of housing?

Red indicates insufficient supply to meet the demand due to the creation of new households. Blue indicates sufficient supply.



Notes: The relative shortage of new housing in a location is measured by comparing the cumulative number of new building permits between 2020 and 2022 and net household creation over the same period. Specifically, we have calculated the following metric: $\text{Imbalance} = (\text{new households} - \text{permits}) / (\text{new households} + \text{permits})$. Positive values indicate that more new households are being created than new housing (insufficient housing supply).

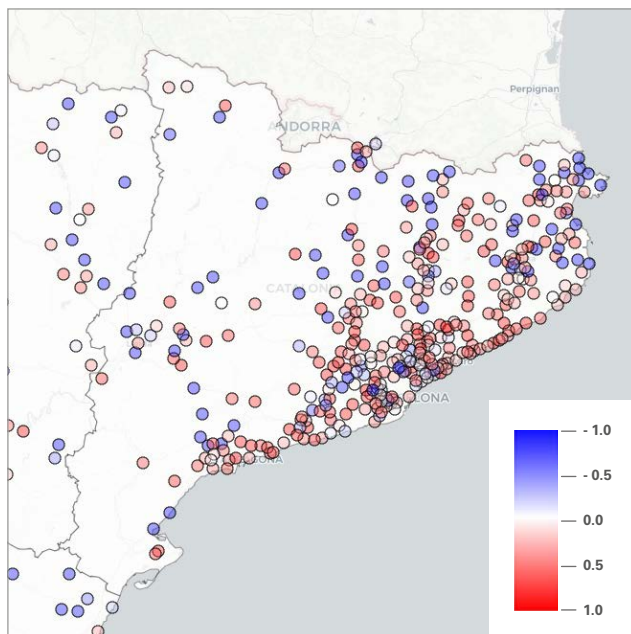
Source: CaixaBank Research, based on data from the National Statistics Institute, Ministry of Transport, Mobility and Urban Agenda and own estimates.

If we zoom in on Catalonia and Madrid, we can see that this shortage of supply is not only limited to the capital cities of these regions but is also affecting many other surrounding towns. This phenomenon is especially evident in the metropolitan area of Barcelona, where some towns such as Santa Coloma de Gramenet (0.72) and Sant Just Desvern (0.79) present an «imbalance» that is much higher than Barcelona city itself (0.46). This shortage can also be observed in the most highly populated towns of the third and fourth ring around Barcelona (Terrassa, Sabadell, Rubí, etc.), on the Maresme coast north of the city (Mataró, Premià de Mar and Calella) and in some towns in central Catalonia, in this case not so much because of demographics but rather due to the very limited supply of new housing (Berga, Vic, Manlleu, Igualada, etc.).

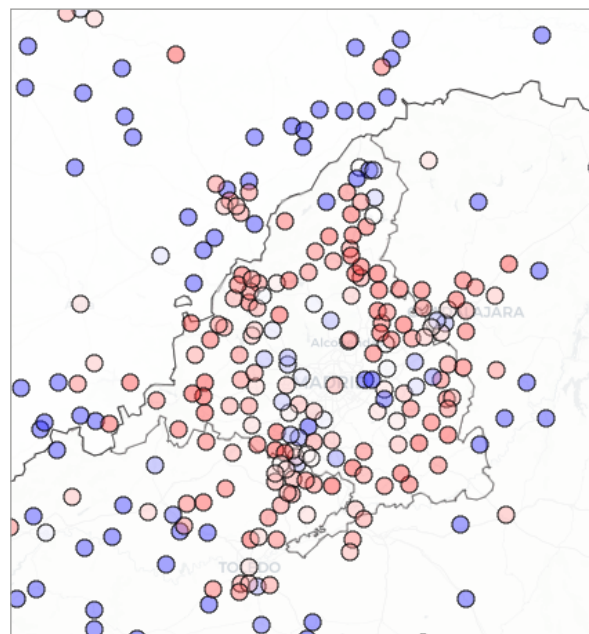
Which municipalities are most in need of housing?

Red indicates insufficient supply to meet the demand due to the creation of new households. Blue indicates sufficient supply.

Catalonia



Community of Madrid



Source: CaixaBank Research, based on data from the National Statistics Institute, Ministry of Transport, Mobility and Urban Agenda and own estimates.

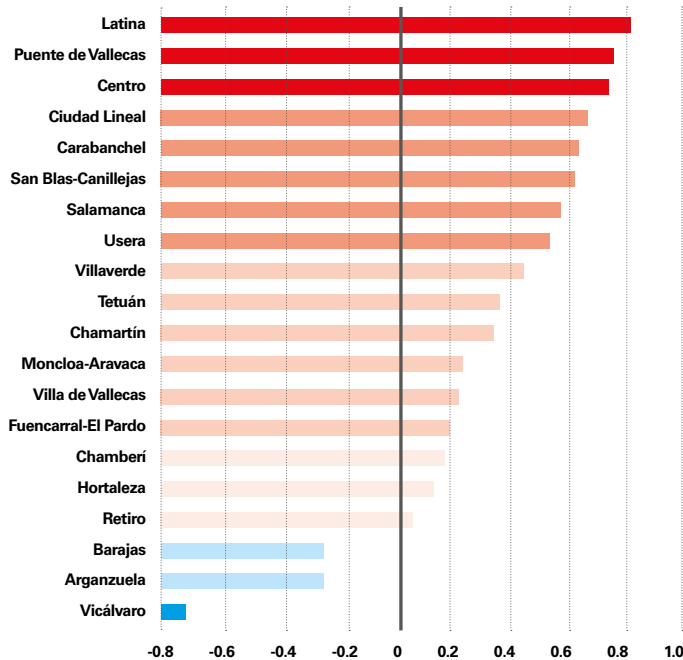
Similar conclusions can be drawn for the cities of Barcelona and Madrid: in most districts there is a notable shortage of housing in relation to the new households being formed. The only exception are those districts in which most of the cities' urban development is already currently taking place, such as the district of Sant Martí in Barcelona and those of Vicálvaro, Arganzuela and Barajas in Madrid.

In most districts of Barcelona and Madrid there is a notable shortage of housing in relation to their household formation

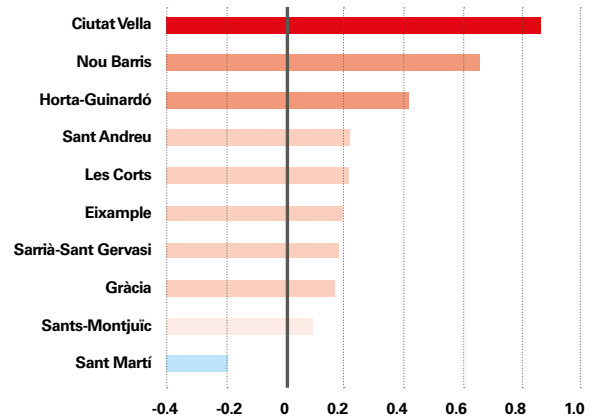


Insufficient supply of housing in the districts of the cities of Madrid and Barcelona

Madrid



Barcelona



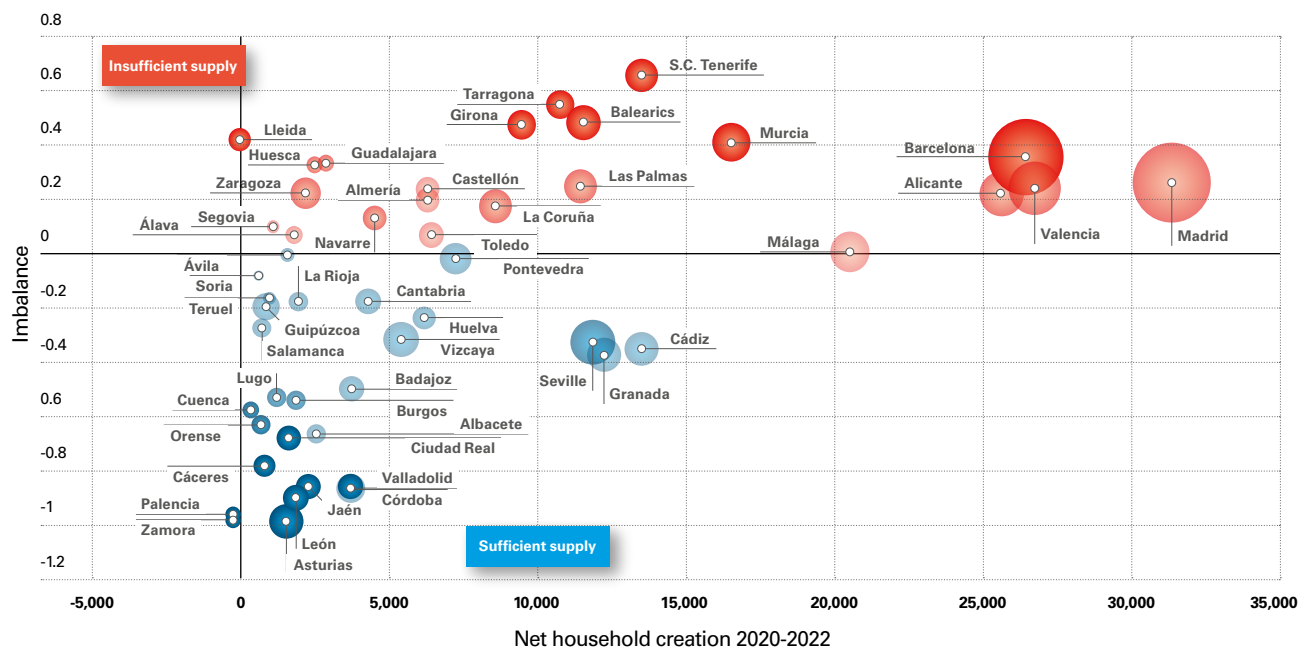
Source: CaixaBank Research, based on data from the National Statistics Institute, Ministry of Transport, Mobility and Urban Agenda and own estimates.

Delving a little deeper into the geographic differences, the chart below shows municipal data aggregated by province.¹⁸ It reveals a positive relationship between the average imbalance of a province and its net household creation. The Community of Madrid, with 31,350 new households between 2020 and 2022, stands out as the region with the greatest demographic dynamism. 76% of the 128 municipalities in this region for which information is available suffer from a shortage of supply (imbalance >0), 81% of the region's population lives in these municipalities and the average «imbalance» is 0.26. The figures are similar for the province of Barcelona: 72% of the 192 municipalities with information suffer from a shortage of supply, 85% of the province's population lives in these municipalities and the average «imbalance» is 0.35. The data for the more tourism-oriented provinces reveal even greater stress (see the chart below).

¹⁸ Aggregate data weighted by the number of households in 2022.

Municipalities with a shortage of housing recorded higher growth in house prices between 2019 and 2022

The most demographically dynamic provinces suffer from the greatest shortage of housing



Notes: Municipal data aggregated by province and weighted by the number of households in 2022. The size of the bubble corresponds to the number of households in 2022.

Source: CaixaBank Research, based on data from the National Statistics Institute, Ministry of Transport, Mobility and Urban Agenda and own estimates.

Provinces with the greatest shortage of housing in relation to household formation

Province	Number of municipalities whose information is available	% of municipalities with a shortage of supply	% of households in municipalities with a shortage of supply	Average imbalance	Projected household creation (2023-2027)
Santa Cruz de Tenerife	40	88%	97%	0.65	10.3%
Tarragona	40	80%	95%	0.55	8.1%
Balearics	52	90%	97%	0.48	10.4%
Girona	107	64%	90%	0.47	8.1%
Lleida	34	47%	86%	0.42	2.9%
Murcia	32	75%	91%	0.41	8.4%
Barcelona	192	72%	85%	0.35	6.5%
Guadalajara	28	61%	85%	0.33	7.5%
Huesca	36	33%	85%	0.33	4.7%
C. of Madrid	128	76%	81%	0.26	8.5%
Las Palmas	25	76%	54%	0.25	7.6%
Castellón	27	48%	79%	0.23	5.1%
Valencia	76	66%	47%	0.23	5.9%
Alicante	70	70%	75%	0.22	9.6%
Zaragoza	27	56%	92%	0.22	4.3%
TOTAL SPAIN	1,853	52%	61.2%	0.05	5.7%

Notes: Municipal data aggregated by province and weighted by the number of households in 2022. The household projection (2023-2027) is from the National Statistics Institute.

Source: CaixaBank Research, based on data from the National Statistics Institute, Ministry of Transport, Mobility and Urban Agenda and own estimates.



Finally, it is worth examining whether such shortages in supply are generating additional pressure on the growth in house prices in these municipalities. To answer this question, we have estimated a linear regression of cumulative growth in house prices between Q4 2019 and Q3 2022 related to the «imbalance» metric, adjusting for the Q4 2019 price level.¹⁹ The estimated coefficient is positive and significant, suggesting that municipalities with a greater imbalance have experienced higher growth in their house prices.²⁰

Demographic projections indicate that the need for housing could increase in the coming years but many different factors hinder growth in supply

In this article we have shown that, in the most demographically dynamic locations, the construction of new housing is not enough to meet the booming demand. This problem of supply shortages could get worse over the coming years as the population is expected to keep on rising as a result of immigration.²¹ Specifically, according to the latest population projections by the National Statistics Institute, around 217,000 new households could be created per year over the next five years. Furthermore, demographic trends will continue to be very uneven in geographic terms, as household creation is expected to be higher precisely in those provinces that already have an insufficient supply of housing (see the last column in the table above).

¹⁹ House price data are available for 270 municipalities (those with more than 50,000 inhabitants).

²⁰ Specifically, the coefficient is 1.4, implying that a municipality with an imbalance equal to 1 experienced, on average, a growth in house prices that was 1.4 pp higher than the growth in a municipality with an imbalance equal to 0.

²¹ The National Statistics Institute projects an increase of 1.88 million people over the next five years, arriving at a population of 49.3 million in 2027. Although the number of people born in Spain will fall (-106,000 people per year), this will be more than offset by immigration (+483,000 people per year).

This lack of housing supply in the most dynamic economic areas is not a phenomenon unique to Spain but can also be observed in other European countries and the US.²² As people move in search of better employment, education and economic opportunities, the demand for housing in the most economically productive regions far exceeds the production of new housing.

In Spain, the residential development and construction sector points to several factors that limit the growth in supply in these more congested areas, including the scarce availability of land, an aspect closely related to different urban planning regulations which, in many cases, make it difficult to find new land for housing. In addition to these key factors limiting the development of new builds are also certain administrative aspects, such as slowness in processing permits and legal uncertainty, together with other factors such as insufficient labour, higher construction costs and shortages of some inputs. Moreover, in the current economic context it is very likely that many companies in the sector will be forced to postpone the launch of new projects due to the worsening macroeconomic situation and the impact of rising interest rates on demand.

② It is estimated that, in the US, 3.8 million new homes are required to meet the housing needs in the most economically productive regions, according to the report «Housing Underproduction in the U.S.», Up For Growth, 2022. In Europe, the report «The State of Housing in Europe in 2021» points to insufficient housing as one of the main problems facing many European countries, especially in urban areas where there is not enough subsidised or affordable housing.

In the current economic context, it is very likely that many companies in the sector will be forced to postpone the launch of new projects due to the worsening macroeconomic situation and the impact of rising interest rates on demand



The volatility of commodities

How will construction costs evolve in Spain in 2023?

Construction costs in Spain have increased considerably since January 2021, a rise that was prompted by the strong recovery in global demand as the economy reopened after the pandemic but was further aggravated by the outbreak of war in Ukraine. In recent months, however, the price of industrial metals on international markets has fallen sharply and the futures markets point to prices stabilising to some extent. Given this situation, the cost of construction materials in Spain is expected to moderate in 2023.

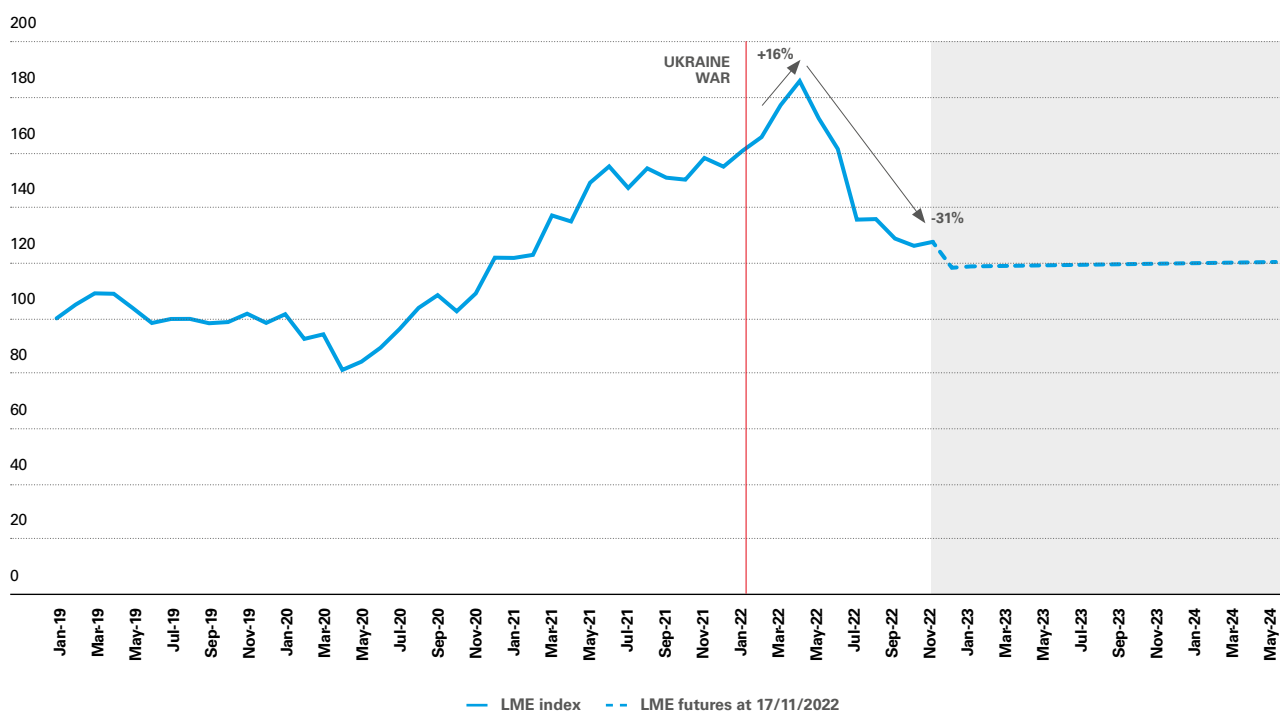
2022 was a particularly volatile year for commodities. A series of events affected commodity prices, including industrial metals, to a greater or lesser extent throughout the year, such as the war in Ukraine and the energy crisis, as well as the strong appreciation of the dollar, China's recent slowdown in growth and the prospect of a worldwide economic slump. A glance at some of the benchmark metal indices on the international markets endorses this scenario. For example, the London Metal Exchange (LME) index, commonly used as an international benchmark, rose by 53% between January 2021 and April 2022 following the outbreak of war in Ukraine. Since then its value has fallen although it is still 28% above its pre-pandemic level.²³

²³ Other benchmark indicators also performed similarly. For example, between January and April 2022 the JP Morgan metals index rose by 20% and, despite its recent decline, is still 59% above its pre-pandemic level. These same figures for the Rogers metals index were 18% and 26%, respectively.



Metal prices have been very volatile on international markets while the futures markets point to a stable trend

London Metal Exchange (LME) index
(100 = January 1919)



Note: LME futures are a weighted average of global aluminium and copper futures.

Source: CaixaBank Research, based on data from Bloomberg.

The outbreak of war in Ukraine accentuated the upward trend in commodity prices. Since the summer, prices have fallen and futures suggest they will stabilise at current levels

These fluctuations are due to several factors. First, Russia is one of the world's major suppliers and exporters of commodities, including metals and other materials used in construction. In addition, the war in Ukraine led to negative expectations among investors who anticipated higher energy costs and therefore a fall in the supply of metals (whose production is highly energy intensive). However, these same expectations took a drastic turn when the worst fears of commodity shortages due to the conflict did not materialise and, later on, due to the deterioration of the growth prospects in developed economies. At the same time, another important factor in the recent decline in metal prices is the trend in China's demand for commodities. During 2022, the Asian giant introduced severe restrictions on travel due to COVID-19. This resulted in a paralysis of its economic activity. In parallel, the country's real estate sector is in a delicate position because of the impact

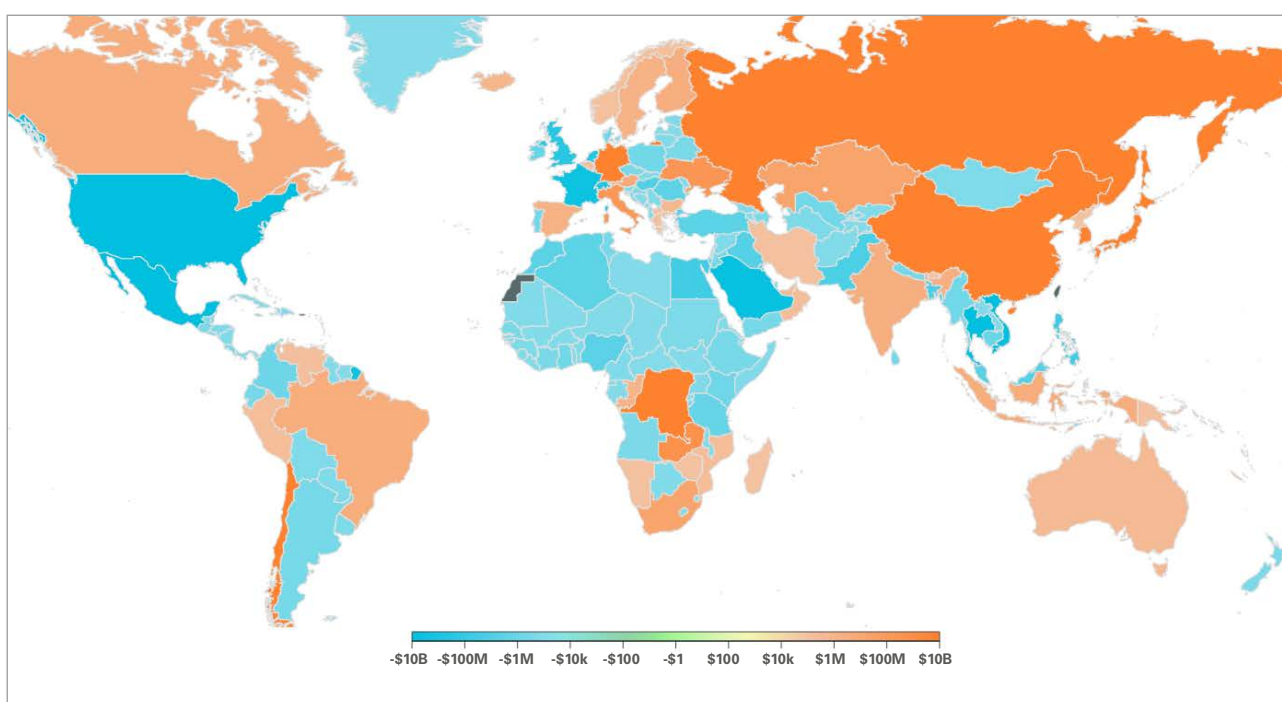


Real Estate

of policies adopted to curb its real estate bubble.²⁴ Finally, the dollar's appreciation (a direct consequence of the Fed's monetary policy) has pushed down commodity prices even further as they are traded in dollars on international markets. Given this downward pressure on international industrial metal prices, a logical question would be whether this will have an impact on construction costs in Spain. And, if so, when will we see it?

²⁴ See the Focus «China's real estate sector (part II): emergency landing or low-altitude flight?» in the March 2022 *Monthly Report*.

Map of metal-exporting countries: Russia, with 22.4 billion, is the world's third largest exporter



Note: Net exports in 2020 by value added.
Source: Observatory for Economic Complexity, MIT.

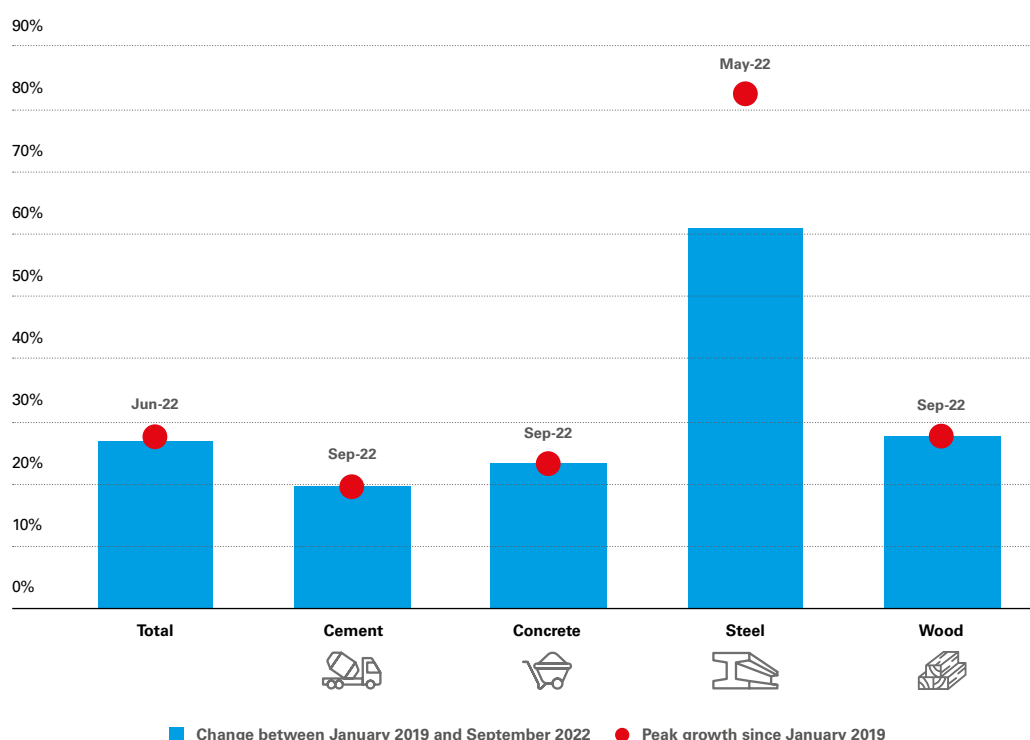
Estimated trend in construction costs in Spain based on industrial metal prices in international markets

To shed more light on this issue, we have developed a time-series econometric model that allows us to determine how industrial metal prices in international markets affect construction costs in Spain. But before going into detail regarding the results of this model, it is worth reviewing the recent trends in Spain's construction costs.

In Spain, construction materials have become significantly more expensive and a reversal of this trend is still unlikely in the short term

According to data from Spain's Ministry of Transport, Mobility and Urban Agenda, in September 2022 the cost of residential construction materials was 26.7% higher than in January 2019 (slightly lower than the peak growth of 27.6% reached in June 2022). In our analysis, we focus on cement, concrete, steel and wood as representative materials in construction. The chart below shows that, in September 2022 cement and concrete were approximately 20% more expensive than at the beginning of 2019 while the price of wood was 28% more higher. We can also observe the extreme case of steel, which became 84% more expensive and whose price in September was still 61% higher than in January 2019.

Sharp increase in the cost of construction materials in Spain



Note: Total residential construction costs (including all residential construction materials).

Source: CaixaBank Research, based on data from the Ministry of Transport, Mobility and Urban Agenda.



Real Estate

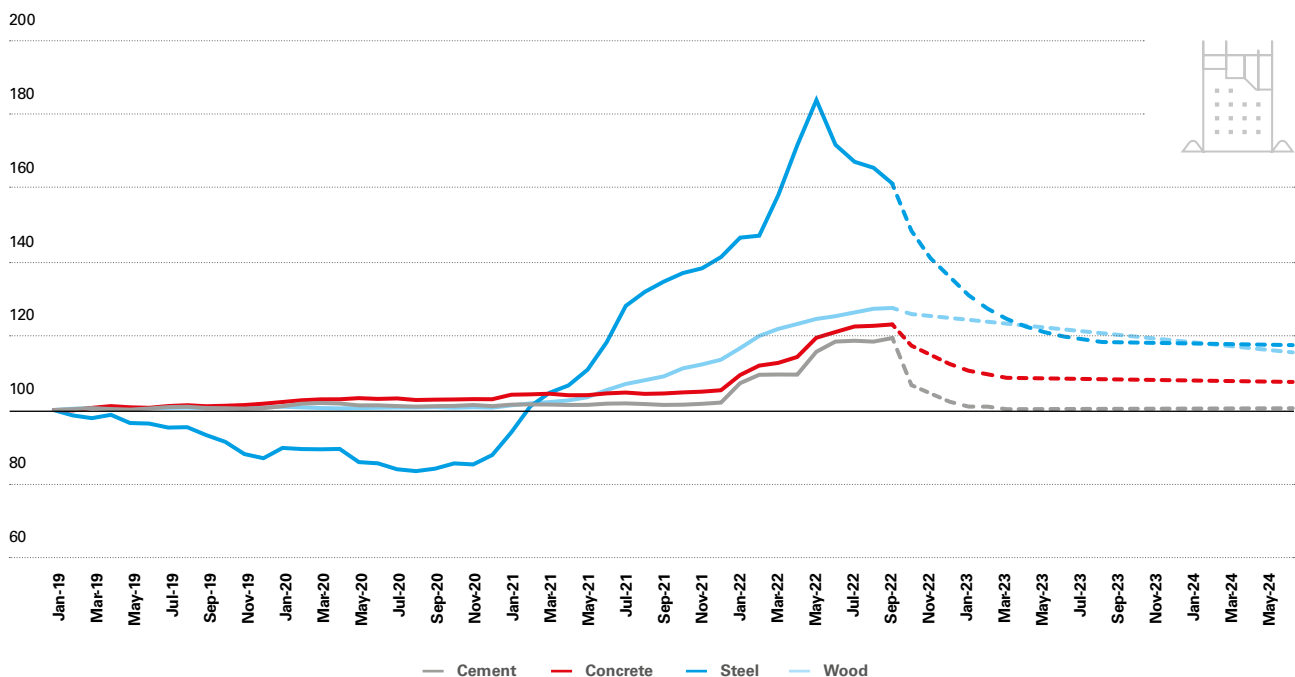
In order to project how construction costs in Spain may evolve in 2023, we use the prices from the LME futures market.²⁵ According to the mid-November futures curve, investors expect metals to fall slightly in December and remain stable in 2023. In line with the evolution of LME futures, our model²⁶ predicts that steel, concrete, wood and cement prices will also decrease in 2023 (see the chart below), a decline which would be moderate for wood (2%) and more significant for steel (23%), according to our estimates. The difference between the drop in steel and wood is due to the fact that the former correlates more closely with the real estate market cycle, which is currently in a moderating phase. Likewise, steel rebounded much more, partly due to its greater exposure to the Ukraine conflict (Russia is one of the largest steel exporters). Wood, on the other hand, does not suffer from such exposure.

²⁵ We have used synthetic futures, calculated via a weighted mean between global aluminium and copper futures. The LME has a 97% correlation with the linear combination of these two futures. The aluminium and copper futures used are from 17/11/2022.

²⁶ For each construction material, we've created an autoregressive model with an explanatory factor, the LME Index.

Projection of construction material costs in Spain based on the LME index

Index (100 = January 2019)



Note: The dotted lines indicate the projected cost of each material using an autoregressive model with an explanatory factor, the LME index.

Source: CaixaBank Research, based on data from Bloomberg and the Ministry of Transport, Mobility and Urban Agenda.

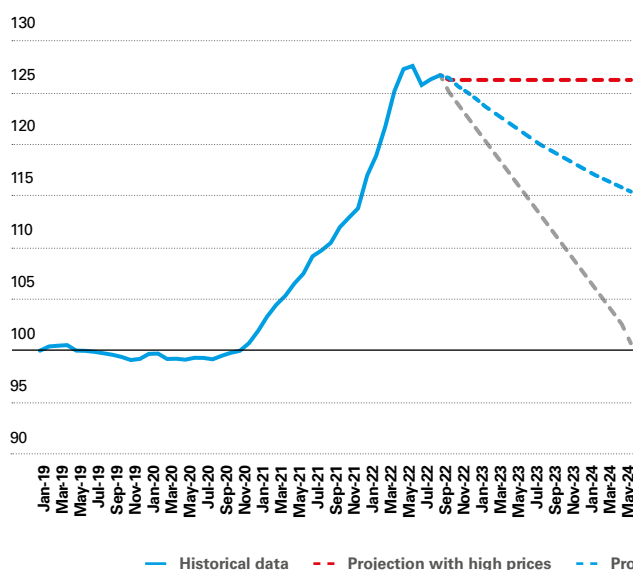
Next we have looked the effect this trend in price of the different commodities would have on the total cost of residential construction. To do so, we have used a time-series model that captures the persistence of construction costs²⁷ and the trends in the price of cement, concrete, steel and wood, together with their projections obtained from the LME futures. In parallel, and for illustrative purposes, we have simulated two alternative scenarios with construction costs moving in opposite directions. On the one hand, we have constructed a scenario that assumes another shock in which commodity prices would stay at the level

²⁷ A persistent series is one where the value of the variables at a certain date is closely related to the previous value.

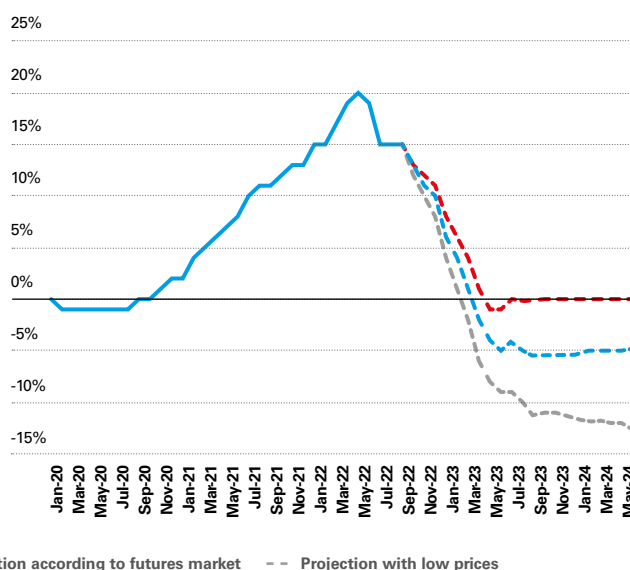
reached in August 2022, remaining at that level throughout 2023 (e.g. as a consequence of an escalation in the Ukraine conflict with global consequences). On the other hand, we simulate the trend in construction costs in a scenario in which commodity prices converge in mid-2024 at their 2019 average, the pre-pandemic level (e.g. as a consequence of China's economy cooling down more than expected or a severe correction in real estate markets). The results of this exercise can be seen in the charts below.

Projected construction costs in 2023 under different scenarios

Index (100 = January 2019)



Year-on-year change (%)



Source: CaixaBank Research, based on data from the Ministry of Transport, Mobility and Urban Agenda.

As we can see, the model based on international metal futures leads us to a scenario in which a substantial drop in construction costs in Spain would begin in December. In 2023, the year-on-year change would moderate, reaching negative values as of April. On average, residential construction costs in 2023 would be 3% lower compared with 2022, although in December 2023 they would still be 15% higher than in January 2019.

Despite the expected decline, in 2023 residential construction costs in Spain would still be higher than their pre-pandemic level



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On the other hand, in a scenario of high prices, construction costs would remain at high levels in 2023, with 1% year-on-year growth. Finally, the results of the model assuming lower prices (a return to 2019 levels by mid-2024) show a similar trend to that of the central scenario but with a somewhat sharper decline. In this case, negative year-on-year changes would be posted from March 2023 and, on average in 2023, prices would be 7% below their 2022 level.

Final remarks

Numerous geopolitical and economic occurrences in Ukraine and China, along with the dollar appreciation, have led to increased commodity volatility. Among these, the price of industrial metals rose sharply during the first few months of 2022, followed by a drop that seems to have left the previous peak behind. Based on investors' expectations for industrial metal prices in international markets, we estimate that construction costs in Spain could decline in 2023 although they would converge at prices that are still 15% higher than the pre-crisis values. All in all, the economic and geopolitical situation is uncertain, and there are numerous upside and downside risks that could materialise depending on the China's recovery path, the evolution of its real estate market and other geopolitical factors related to the war in Ukraine.

An attitude of 'wait and see' in the sector

Given the economic scenario, the commercial real estate market goes into 'wait and see' mode

Commercial real estate performed very well in the first half of 2022 but this situation is changing rapidly in the wake of the sharp hike in interest rates implemented by the ECB to curb the advance of inflation. All the evidence seems to suggest that office property may see the largest adjustment in valuation terms as this has the narrowest yields. Retail, whose valuations have already suffered several years of intense adjustment, could now become more stable than the rest of the segments. On the other hand, logistics assets, the star product lately due to the boom in e-commerce, may be more sensitive to any deterioration in the macroeconomic environment. Finally, we look at the co-living segment which has been attracting a lot of investor interest recently in Spain, especially in the case of senior living, a segment with very positive prospects considering the demographic outlook that will support demand in the medium and long term and the current limited supply.

Tailwinds for commercial real estate in the first half of 2022

The upward trend that began early in 2021 in the commercial real estate market continued through the first half of 2022, mainly thanks to highly favourable financing conditions and considerable investor appetite for this type of asset. According to the latest price index for the commercial real estate market provided by the Bank of Spain,²⁸ over the past year and a half valuations have recovered across the board, almost recovering their pre-pandemic levels in the first half of 2022.

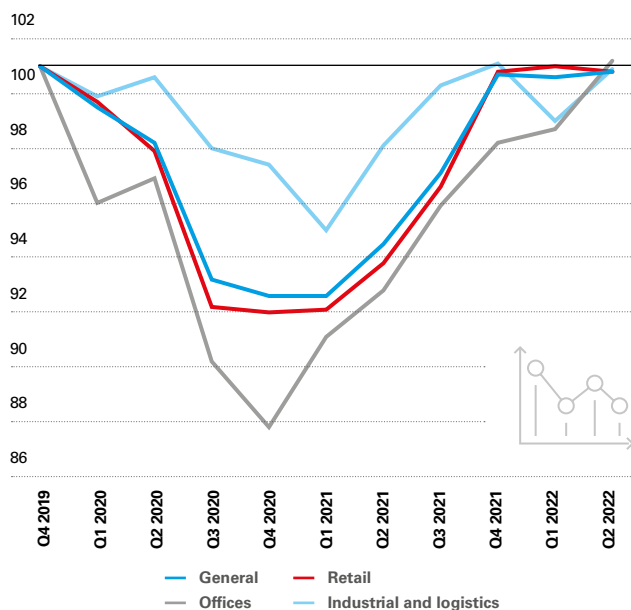
²⁸ A description of the methodology used for this recent price index is contained in the working paper by Matías Lamas and Sara Romaniega (March 2022): «Designing a Price Index for the Spanish Commercial Real Estate Market». Occasional Paper, no. 2203.



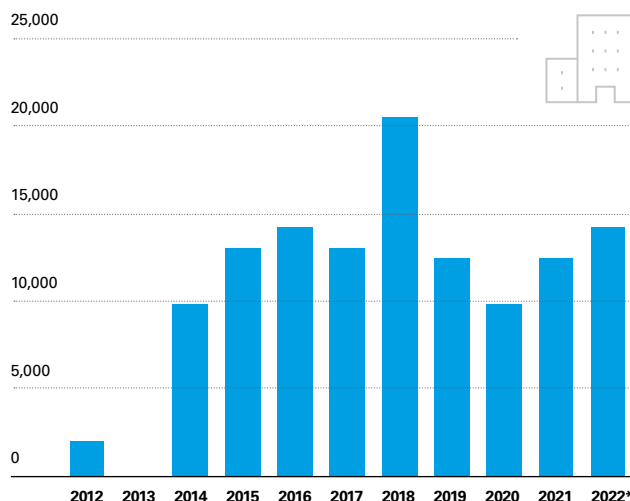
Real Estate

The revival is even more evident in terms of investment: in the first three quarters of 2022, the volume of investment exceeded the annual figure for the last 10 years (€14.226 billion), with the exception of 2018 (around €20 billion according to the real estate consultancy firm CBRE).

Price index for the commercial real estate market
(100 = Q4 2019)



Investment in commercial real estate in Spain
Million euros



Notes: (*) Cumulative for the year up to Q3 2022. The investment figure includes hotel assets.
Source: CaixaBank Research, based on data from the Bank of Spain and CBRE.

The most notable recovery in prices has occurred in **office property**. This is one of the segments hardest hit by the pandemic, especially in the early stages of severe restrictions on travel and with people working from home, when prices fell by more than 15% year-on-year. Once these more acute phases of the health crisis were over, and after teleworking had started to normalise (a hybrid approach appears to be the new predominant model), the office segment has gradually regained its previous valuations while yields have increased,²⁹ although it's true that investment volumes are still modest compared with the segment's past achievements.³⁰

Offices are the asset where valuations have recovered the most but retail is the segment in which investment has outperformed its average for the last five years

²⁹ The yield (or profitability) of commercial real estate investment refers to the ratio between the income gained and the value of the asset.

³⁰ Investment has recovered in Madrid, improving on the dismal figures posted in 2021. Nevertheless, investment volumes are below the average for the last five years according to data used by the real estate consultancy firm CBRE. In Barcelona investment moderated in 2022 compared with its excellent performance in 2021, when it was boosted by the 22@ district project, but it's also slightly below the average for the last five years.



Similar conclusions can be drawn for the segment of **retail**. This is the other real estate asset most affected by the consequences of the pandemic. Since then, this sector has clearly recovered, already posting valuations just 0.2% below those recorded before the health crisis, while investment volumes have rebounded more strongly than in the office property segment.³¹ In the specific case of shopping centres, a gradual recovery in terms of sales and footfall towards pre-pandemic levels is also being observed, much more evident in terms of revenue (only 4% below 2019 levels) than visits (–16.5% below), as the return of people to the leisure facilities provided by such centres has been much slower since the pandemic.

³¹ So far, investment in retail has clearly outperformed the annual investment since 2019 (cumulative investment of €3,556 million up to Q3 2022) and is now at levels similar to its pre-pandemic five-year average.

Shopping centre indicators continue to move towards their pre-pandemic levels but the rebound in footfall is incomplete due to a delayed recovery in leisure

Finally, the segment of **industrial and logistics** suffered the least throughout the pandemic. In fact, supply shortages and the new needs associated with the rise in e-commerce and data centres (again, related to the boom in teleworking and digitalisation processes), among other post-pandemic trends, have made it the star segment in commercial real estate investment in the last two years. The predominant aspects of 2022 were a large area of warehouses under contract, a sharp decline in vacancy rates, and an increase in available supply.



Digitalisation processes, the boom in e-commerce and teleworking have turned the industrial and logistics segment into the star asset for investment in Commercial Real Estate (CRE)

So how will the current scenario of high inflation and interest rate hikes affect the trends in the commercial real estate sector?

The outbreak of war in Ukraine at the beginning of 2022 has been a differential factor for the global economic scenario and, therefore, also for the Spanish economy. Although it is true that Spain is less exposed to the conflict than other central European economies, the energy crisis, especially on international natural gas markets, has had a significant impact on inflation, driving it to 40-year highs. Signs that this rising energy bill is being passed on to other items in the shopping basket and fears that inflation is becoming entrenched in the economy led the ECB to abandon its ultra-expansionary policy of recent years and raise benchmark rates particularly aggressively (+200 bp since June). Given this situation of high inflation and rising market interest rates, growth forecasts for 2023 have been revised downward across the board.³²

³² For a more detailed examination of the factors behind the change in scenario for the Spanish economy according to CaixaBank Research forecasts, please refer to the Outlook Dossier published in the November 2022 *Monthly Report*.

This context will also directly affect the commercial real estate market. There can be no doubt that a widespread increase in interest rates makes the financing of investment operations more expensive. As a result these operations, which are usually accompanied by leverage, become less attractive compared with other alternatives. An investor in commercial real estate will therefore look for higher returns (and this requires either an increase in rents, a moderation in prices, or both) to make such investments attractive.

The commercial real estate market has gone into 'wait and see' mode as valuations and yields are still adjusting to higher market interest rates

In fact, in the last few months of 2022 there was already an evident mismatch in the market between a supply that is reluctant to reduce the value of assets that had been in strong demand in previous months and a demand that needs valuations more in line with the current situation and more attractive returns. This mismatch is reflected in the paralysis or postponement of many investment operations. As a result, the market has gone into 'wait and see' mode, at least until it becomes clear to what extent the ECB will raise benchmark interest rates.³³ In any case, we don't expect the market to come to a complete or abrupt halt, seeing as interest rates are still relatively low in historical terms and, above all, bearing in mind the fact that there is still liquidity in the market.

³³ For more on monetary policy expectations, see the article «Is there light at the end of the tunnel? The outlook for monetary policy in 2023» in the November 2022 *Monthly Report*.



In this respect, those assets whose yields have already accumulated significant adjustment, as is the case of the retail segment of commercial premises, should be the least affected by higher market interest rates. On the other hand, in the case of the star segment in recent months, namely industrial and logistics warehouses, yields still have room for upward adjustment.

But beyond any impact the interest rate hikes may have, there are also more structural factors that will affect the commercial real estate market. In the case of office properties, the current outlook is relatively positive as the penetration of teleworking has not been as extensive as initially thought and, in addition, hybrid formats are creating a need for new spaces. Significant investment in traditional offices will therefore be required in order to transform them to the hybrid model. Moreover, the labour market outlook has not deteriorated to any material extent.

As far as retail premises are concerned, the sector was already exposed to digitalisation processes and e-commerce long before the outbreak of the pandemic, which explains this segment's strong consolidation in recent years. Although it is true that the current scenario assumes consumption will slow down in the short term as a result of the loss of household purchasing power, a severe correction is not expected in a segment that gone through huge adjustments in recent years. In addition, as with offices, the emerging need for hybrid locations that combine shopping in person (still the predominant form) with e-commerce suggests that this segment will remain quite attractive for investors.



Real Estate

Finally, industrial warehouses and logistics assets will continue to be of great interest to investors, especially because the supply and the processes that have been driving them (digitalisation and e-commerce) still have a lot of room for expansion in Spain over the medium to long term.

The current boom in senior living is based on solid fundamentals and the scarcity of supply in Spain

Residential property is one of the commercial real estate segments arousing the most interest in investors since the outbreak of the pandemic.³⁴ Behind this interest lie aspects such as the new housing needs arising as a result of the pandemic, the emergence of the co-living segment which is closely associated with increased teleworking and the attraction of talent, as well as the need for greater integration between the social and work-related aspects of housing. This is also a segment in limited supply in Spain compared with neighbouring countries. In fact, since the outbreak of the pandemic the rise in property prices has once again highlighted the need to expand supply in the rental market and public-private partnerships are being promoted to expand the supply of rented housing through the build-to-rent segment.

Within this broad segment is a totally new asset that is working well in neighbouring countries and becoming increasingly important in Spain: senior living. This refers to alternative living spaces to the traditional retirement homes, designed for the senior population (65 and older) who have reached retirement age in good health and with the ability and need for social, leisure and community-based activities. This type of product combines the benefits of rented accommodation (in terms of low maintenance) whilst providing the opportunity for leisure activities inherent in a shared living space. In addition, care-type services can be added as the years go by without incurring excessive costs, thanks to economies of scale and synergies.

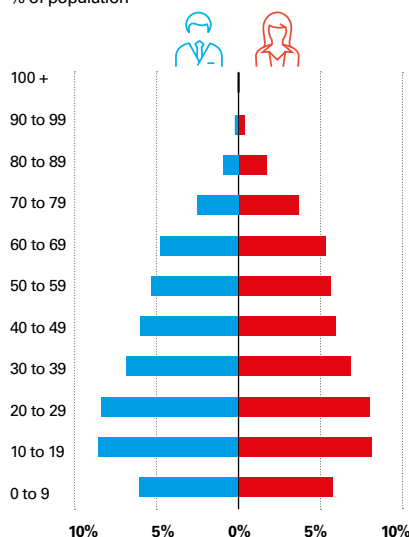
The fundamentals on the demand side of this asset are very solid. The Spanish population is ageing gradually and progressively, so that the traditional population pyramid is flattening at the base (lower birth rate) and widening at the top (more population in older cohorts), losing its triangular shape. Moreover, population projections by the National Statistics Institute suggest this trend will continue in the coming years. Specifically, the Spanish senior population will grow by 64% over the next 30 years and account for 31% of the total population (20% today).

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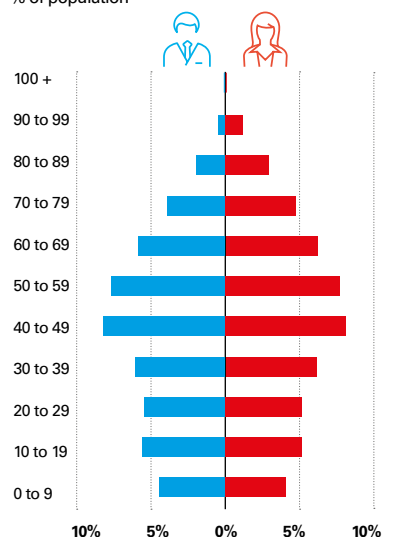
³⁴ The co-living segment has been the most dynamic in CRE investment in 2022, with an investment of around 3.7 billion euros up to Q3 2022, the highest figure in the available series.

Population pyramid 1990

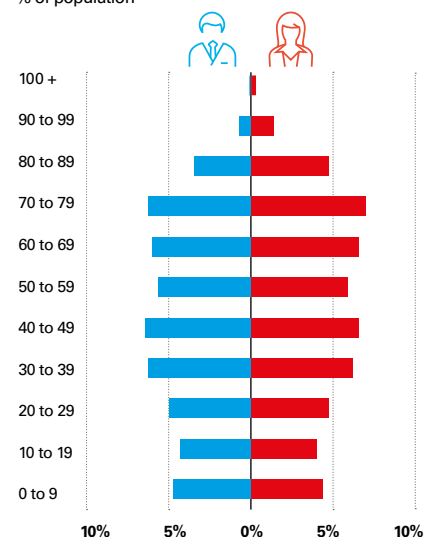
% of population

**Population pyramid 2022**

% of population

**Population pyramid 2050**

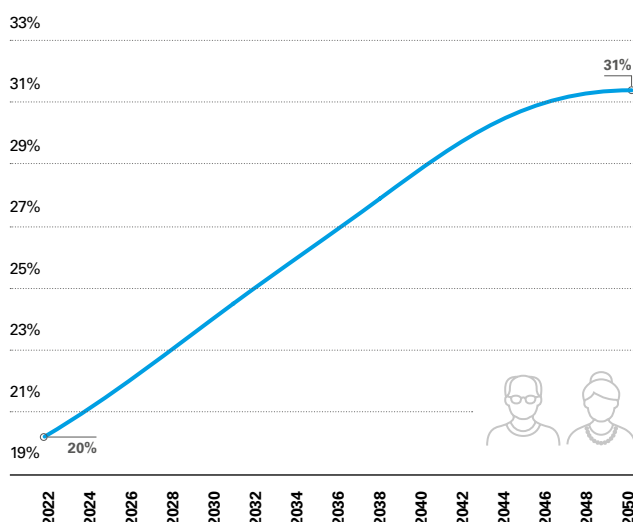
% of population



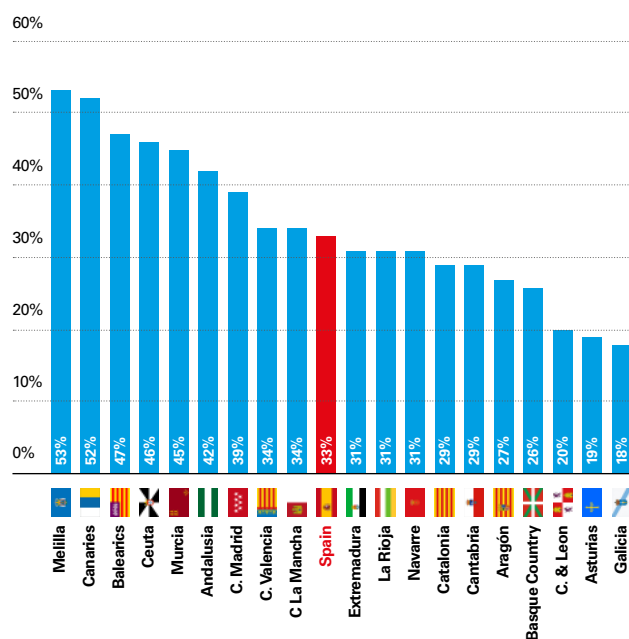
Source: CaixaBank, based on data from the National Statistics Institute.

Population over 65 in Spain

(% of total population)

**Increase in senior population by autonomous region**

Cumulative growth between 2022 and 2035



Source: CaixaBank, based on data from the National Statistics Institute.

Andalusia, Catalonia, the Community of Madrid and the Community of Valencia would be the regions with the largest senior population in Spain, which is not so surprising since they are also the most populated. But how do these figures compare with the senior living properties currently available? In fact, most of Spain tends to have a smaller supply available than recommended: according to the WHO, the optimal coverage ratio would be around 5 places for every 100 citizens aged 65 and over.³⁵

³⁵ This reference includes the case of residential homes for the elderly.

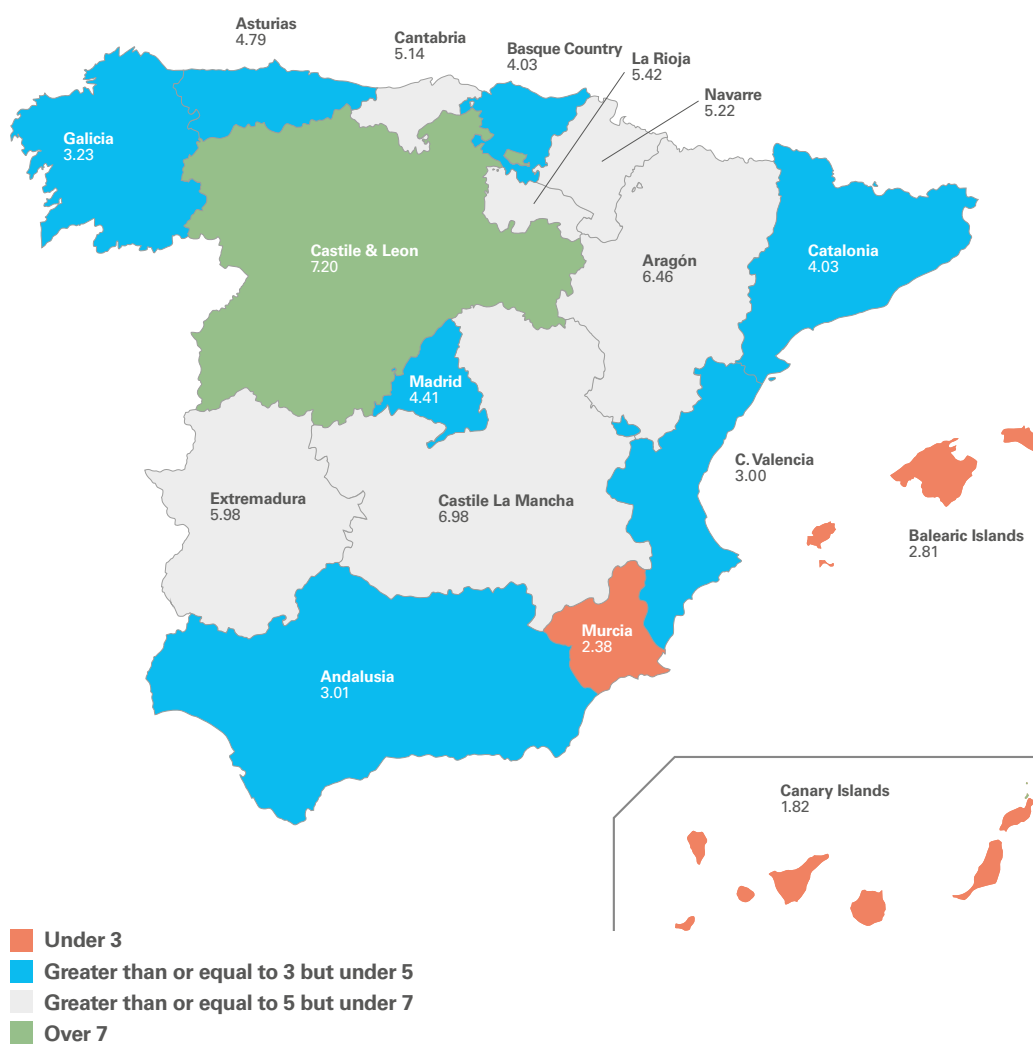


Real Estate

The following map clearly summarises the current mismatch between supply and demand in Spain, where the average coverage rate is 4 places per 100 senior citizens. The only notable exception is Castile & Leon, while the smallest supply is in the island regions and Murcia. On balance, the conclusion is obvious: there is room to expand the supply of places in this segment.

Coverage rate by autonomous region

Number of places available per 100 citizens aged 65 and older


















































Source: CaixaBank Research, based on data from Colliers Spain.

In addition, population projections suggest that the largest increases in the senior population up to 2035 will occur in the island regions, Murcia, the Community of Valencia and Madrid. In other words, demand will be even greater in those regions that are not only particularly dynamic in economic terms (Madrid and Valencia) but also particularly attractive for senior foreign nationals (this would be the case of the rest of the highlighted regions).

Indicators and forecasts

Annual change (%), unless otherwise specified

	Average 2000-2007	Average 2008-2014	Average 2015-2019	2020	2021	Forecast 2022 ¹	Forecast 2023 ¹	Trend
 Economic activity indicators								
Total GDP	3.4	-1.2	2.6	-11.3	5.5	4.5	1.0	
GVA construction	3.1	-9.8	3.1	-13.2	-3.0	3.2	1.4	
Investment in construction	5.4	-9.4	6.2	-10.2	-3.7	4.3	2.5	
Residential investment	5.4	-8.5	10.1	-11.4	-4.8	2.8	1.4	
Investment in rest of construction	3.1	-9.8	3.1	-13.2	-3.0	6.0	3.8	
New building permits (thousands)	642	94	80	86	108	100	100	
New building permits	2.8	-28.7	20.9	-19.5	26.6	-7.7	0.0	
Certificates of final completion (thousands)	482	230	57	86	91	95	105	
Certificates of final completion	8.3	-34.9	14.9	9.1	6.3	4.0	10.5	
Confidence in the construction sector (level) ⁵	13.1	-41.7	-20.9	-17.4	-1.9	8.0	-	
 Labour market								
Total workers registered with Social Security	3.5	-2.4	3.1	-2.1	2.5	3.9	1.2	
Registered workers in construction	6.1	-13.5	5.1	-1.7	4.5	3.5	1.0	
Construction of buildings	-	-14.4	7.1	-2.2	5.4	4.3	1.2	
Civil engineering	-	-16.4	1.2	-1.6	2.6	4.8	0.9	
Specialised construction	-	-8.9	4.3	-1.5	4.1	2.8	0.9	
Registered workers in real estate activities	10.3	2.1	6.3	-1.5	2.3	-4.8	-5.0	
Total employees (LFS)	4.1	-2.7	2.6	-2.9	3.0	3.2	0.5	
Employees in construction (LFS)	6.7	-14.0	4.5	-2.6	3.8	2.7	0.4	
Temporary employment rate in construction (%) ⁵	57.6	39.6	41.4	36.7	35.0	27.1	-	
Unemployment rate in construction (%) ⁵	7.5	22.8	12.4	11.0	9.3	7.7	-	
 Demand for housing								
Sales ² (thousands)	886	388	450	420	566	595	480	
Sales ²	-0.1	-8.7	9.2	-16.9	34.8	5.0	-19.3	
New housing ^{2,5}	12.1	-13.4	4.8	-10.1	36.5	6.6	-	
Second-hand housing ^{2,5}	-7.8	-5.0	10.3	-18.4	34.4	21.3	-	
Foreign sales ³	-	11.3	5.5	-25.6	43.8	13.4	-17.8	
Second home sales ⁴	-	-8.5	8.5	-20.4	44.1	9.5	-16.6	
 Prices								
House prices (MITMA)	12.9	-5.7	2.7	-1.1	2.1	5.0	1.0	
House prices (INE)	-	-6.8	5.7	2.1	3.7	7.6	1.7	
New housing ⁵	-	-5.7	6.5	6.5	4.6	8.5	-	
Second-hand housing ⁵	-	-7.7	5.5	1.4	3.6	8.0	-	
Land prices	17.5	-8.7	1.3	-9.4	3.7	4.0	1.0	
CPI rent ⁵	4.3	0.8	0.8	1.1	0.6	1.7	-	
 Affordability ratios								
House prices (% gross disposable income)	6.7	7.9	6.9	7.5	7.8	8.2	8.1	
Theoretical burden (% gross disposable income)	37.8	38.7	31.2	31.7	33.4	36.7	40.6	
Return on rent (%) ⁵	4.5	3.5	4.2	3.7	3.7	3.6	-	
 Financing⁵								
Number of mortgages	5.8	-20.9	10.0	-6.5	23.8	12.9	-	
Outstanding balance of credit to purchase housing	14.1	-1.6	-2.2	-1.8	0.4	0.7	-	
New loans, housing	17.7	-24.9	12.4	-2.1	39.4	13.4	-	
Outstanding balance of credit for property development and construction	23.6	-12.8	-11.0	-5.4	-3.6	-7.3	-	
NPL ratio of credit for housing (%)	0.5	3.5	4.6	3.4	3.1	2.7	-	
NPL ratio of credit for property development and construction (%)	0.5	20.2	20.4	5.8	5.2	4.8	-	

Notes: 1. Forecasts at 15 December 2022. 2. The 2000-2007 average for house sales corresponds to the period 2004-2007 and the data come from the Ministry of Transport, Mobility and Urban Agenda (MITMA). The sales figures from the National Statistics Institute (INE) are as from 2007. 3. Foreign sales according to MITMA. 4. Sales of second homes are estimated based on the sales carried out in a different province than the buyer's residence. 5. The data in the column «Forecast 2022» correspond to cumulative data up to the latest data available for 2022.

Source: CaixaBank Research, based on data from the National Statistics Institute (INE), Ministry of Transport, Mobility and Urban Agenda (MITMA), Ministry of Employment and Social Security and the Bank of Spain.



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