FINANCIAL STABILITY REPORT

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Eurosistema

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FINANCIAL STABILITY: MAIN VULNERABILITIES AND RISKS

FINANCIAL STABILITY: MAIN VULNERABILITIES AND RISKS

Since the Russian army invaded Ukraine in February the growth outlook for the world economy has deteriorated against a background of high inflation and tightening financing conditions. In these circumstances, the risks to financial stability have increased since the last Financial Stability Report (FSR) was published. The risks mainly stem from geopolitical tensions, particularly as regards how the war in Ukraine might unfold, generating extraordinary uncertainty over growth in real activity and the persistence of the current inflationary episode (see Figure 1). In any event, while predicting the economic and geopolitical fallout from the war in Ukraine remains difficult, everything suggests that it will be global in scope and have long-term implications, as witnessed by the trade tensions between geographical areas.

In Spain, the lifting of almost all of the health-related restrictions over recent months gave a very significant boost to activity in 2022 Q2, particularly in the sectors most dependent on social contact. However, the persistence of high inflation, the tightening of financial conditions, ongoing supply-side distortions and bottlenecks, falling

Figure 1
FINANCIAL STABILITY: MAIN VULNERABILITIES AND RISKS (a) (b) (c)

SOURCE: Banco de España.

a In this report, the vulnerabilities are defined as economic and financial conditions that increase the impact or probability of materialisation of risks to financial stability, which in turn are identified as adverse changes in economic and financial conditions, or in the physical or geopolitical environment, with an uncertain probability of occurrence, which hamper or impede financial intermediation, with negative consequences for real economic activity.
b The risks and vulnerabilities in this figure are measured using three colours: yellow (low level), orange (medium level) and red (high level). The arrows denote the change in the risks and vulnerabilities since the last FSR.
c The risk of unfavourable pandemic developments indicated in the Spring 2022 FSR has become less important for assessing financial stability and is included in a group of factors that may adversely affect inflation and activity dynamics.

confidence on the part of agents and high uncertainty all contributed to a weakening of activity in 2022 Q3. These factors are likely to continue exerting downward pressure on the outlook for economic activity in Spain in the coming quarters.

Spanish banks face this new scenario with higher levels of solvency than before the pandemic, and lower NPL ratios. Meanwhile, profits have returned to pre-pandemic levels and now exceed the cost of capital. That said, the current scenario of economic slowdown, high inflation and extraordinary uncertainty increases the risks of a deterioration in credit quality and a further tightening of financing conditions. As a result, a policy of prudent provisioning and capital planning is advisable, to enable higher profits over the short term to be used to make the sector more resilient. This would leave it better placed to deal with any losses over the medium term as a result of worsening economic growth.

The main risks[1,2] to the stability of the Spanish financial system are analysed in greater detail below:

R1. Heightened geopolitical risks.

The uncertainty surrounding the duration and possible escalation of the war between Russia and Ukraine continues to be the main risk factor.

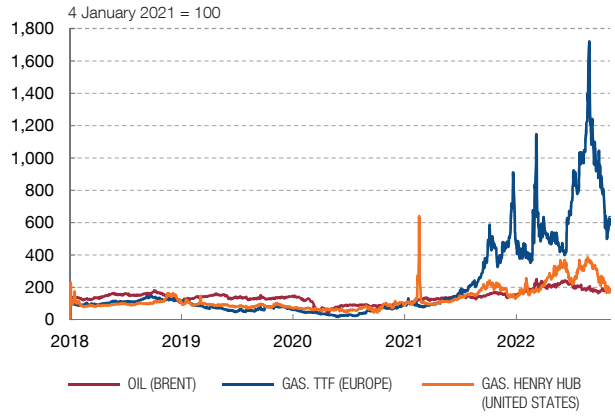
The greatest economic impact of the conflict to date has arisen from the importance of Russia and Ukraine as producers of commodities (essentially energy and metals in the case of Russia and agricultural commodities in the case of Ukraine). The war has led to a very significant increase in energy prices, with a greater impact in Europe, where some countries are particularly dependent on Russian gas and oil (see Chart 1). These developments have led to significant inflationary tensions and have compounded the downside risks to growth. Indeed, the still uncertain consequences of the drastic reduction in Russian gas supplies to Europe during the winter remain the largest short-term risk to economic growth in the European Union (EU).

Also, US-China tensions over the political status of Taiwan and certain trade disputes have heightened in the last six months. This increases the risk of a divided world order becoming entrenched that would, at least partly, reverse the efficiency gains from globalisation.

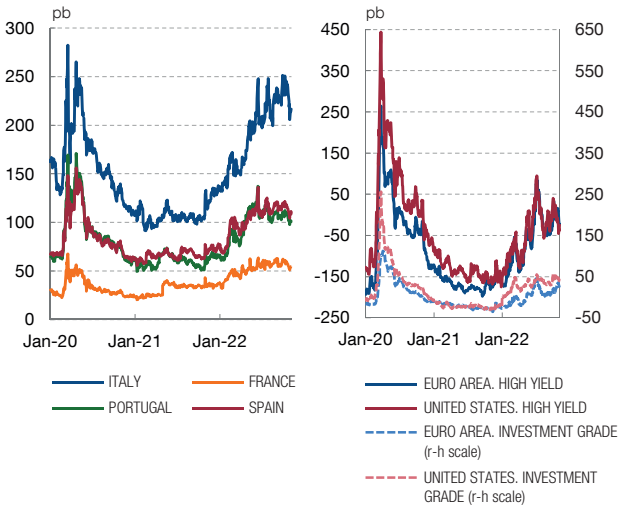
1 Risks to financial stability are defined as adverse changes in economic and financial conditions, or in the physical or geopolitical environment, with an uncertain probability of occurrence, which hamper or impede financial intermediation, with negative consequences for real economic activity.

2 The risk of unfavourable pandemic developments indicated in the Spring 2022 FSR has become less important for assessing financial stability and is included in a group of factors that may adversely affect inflation and activity dynamics.

1 NATURAL GAS AND OIL PRICES (a)



2 TEN-YEAR SOVEREIGN YIELD SPREAD AGAINST GERMANY (L-H PANEL) AND DEVIATIONS FROM THE HISTORICAL AVERAGE OF THE SPREADS OF NFCs' BONDS AGAINST THE SWAP CURVE (R-H PANEL) (b)



SOURCES: Refinitiv Datastream and Banco de España.

a The spot prices of the three markets are expressed in euro for ease of comparison.
b Deviations calculated with respect to the historical average between 1998 and 2022. High yield: ICE Bank of America Merrill Lynch Non-Financial High Yield Index. Investment grade: ICE Bank of America Merrill Lynch Non-Financial Index.

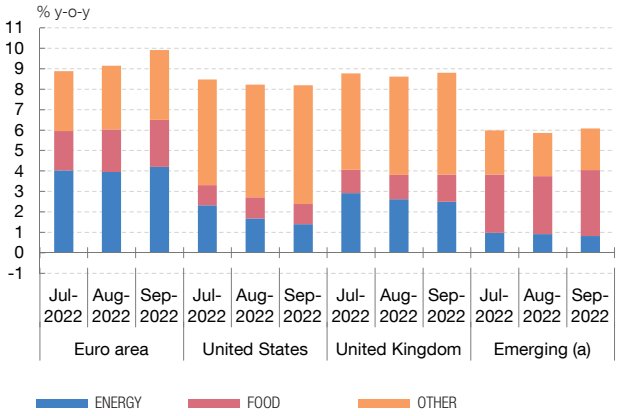
Despite the geopolitical situation, financial markets have not seen high levels of stress, although the risk premia of certain asset categories have risen since the start of the invasion (see Chart 2), and volatility has also increased. More sudden financial market corrections cannot be ruled out if geopolitical tensions continue or intensify.

R2. Higher and more persistent inflation.

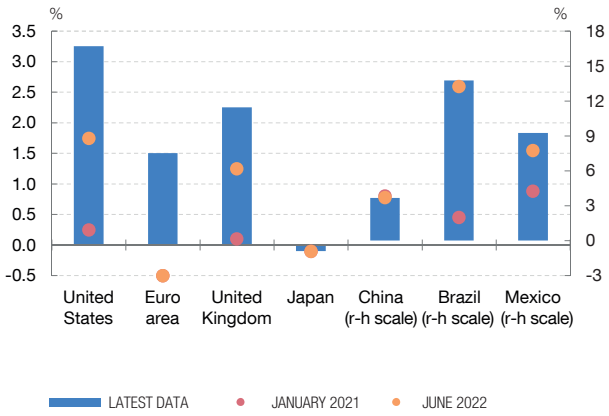
The inflation surge has been global in scope and its scale and persistence have exceeded expectations in many different geographical areas. Different supply and demand factors, with varying weight across countries, have contributed to the acceleration in price growth (see Chart 3). Supply-side factors include most notably the pressures on commodity prices, and on energy goods in particular, the bottlenecks in the production of certain goods and strains in shipping. On the demand side, notable were the fiscal impulse implemented in some areas, particularly in the United States, and the effect of the lifting of the health-related restrictions on the demand for certain services (for example, entertainment, food service activities and tourism).

Against this backdrop, most central banks have responded by tightening their monetary policies (see Chart 4). Given its major influence on global financial conditions, the path being followed by the US Federal Reserve is especially relevant. US inflation is also high, with demand factors playing a greater role. Among the

3 RECENT INFLATION DEVELOPMENTS



4 MAIN POLICY INTEREST RATES



SOURCES: National statistics and national central banks.

a The aggregate includes four geographical areas: China, Asia excluding China, LATAM-5 and Eastern Europe.

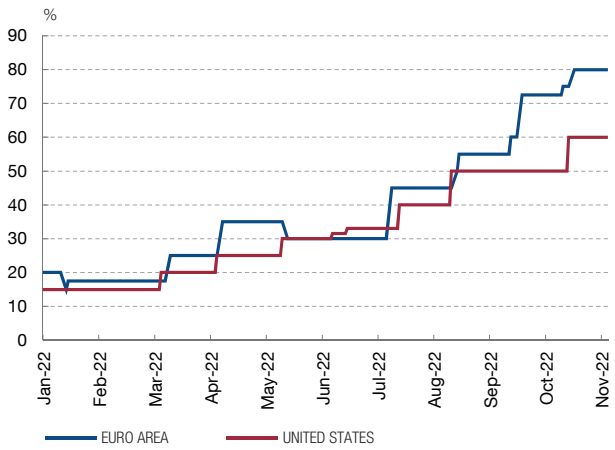
economies in which Spanish banks are active, the Latin American ones are currently increasing their interest rates to a lesser extent, since they are ahead of other central banks in the rate-rise cycle, while in the case of Turkey, soaring inflation and mounting financial imbalances are of particular concern.

In the case of the euro area and the Spanish economy, the role of supply-side factors and, in particular, of the energy component and food prices stands out. Nonetheless, owing to its duration and scale, the increase in energy and other commodity prices is proving difficult for firms to absorb and they appear to be passing these cost increases through to their prices. Thus, rising inflation has spread to an ever larger number of goods and services in the consumer basket.

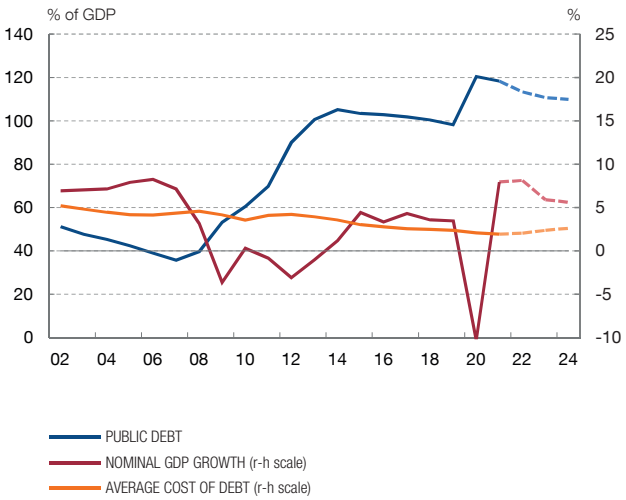
With this in mind, in December 2021 the European Central Bank (ECB) embarked on a process of monetary policy normalisation, which, following the rate hikes at its last three meetings, has already made considerable headway in reversing the accommodative stance from which it started, as borne out by the notable rise in market interest rates across all maturities.

Looking ahead, the heightened uncertainty makes it difficult to predict future developments in the demand and supply-side factors that have been driving up inflation, which may vary across geographical areas. Thus, the degree of monetary tightness the different central banks should apply to meet their price stability targets is hard to predict, adding yet another element of uncertainty. In any event, the main central banks and, in particular, the ECB, have indicated that further interest rate hikes will be required if their price stability targets are to be met.

5 PROBABILITY OF RECESSION ONE YEAR AHEAD. EURO AREA AND UNITED STATES (a)



6 GENERAL GOVERNMENT DEBT IN SPAIN (b)



SOURCES: Bloomberg, Intervención General de la Administración del Estado and Banco de España.

a These indicators are based on the responses to surveys conducted by Bloomberg on the probability of a recession one year ahead. The indices used are: US Recession Probability Forecast Index and Eurozone Recession Probability Forecast Index.
b The Banco de España's "Macroeconomic projections for the Spanish economy (2022-2024)" (published on 5 October 2022) are depicted with dashed lines.

R3. Risk of a contraction in real activity.

Growth forecasts for the second half of 2022 and for 2023 have been revised downwards in almost all areas and especially in the advanced economies. Despite some easing of global value chain bottlenecks since 2021, geopolitical uncertainty, the increase in inflation and consequent deterioration in real disposable income and the tightening of financing conditions have increased the probability of recession in the main developed economies (see Chart 5).

Uncertainty over the future course of supply-side factors also increases the downside risks to growth. The possible disruption to transport and to the supply of certain materials and energy goods, as well as the maintenance of health restrictions in Asia-Pacific, may aggravate global value chain bottlenecks, hampering manufacturing activity. The drastic reduction in Russian gas supplies to Europe may have a severe negative impact on the industrial activity of the EU member countries most directly dependent on such supplies, which would be unevenly transmitted to growth in other EU countries, essentially through trade channels. The uncertainty regarding inflation developments, along with the associated economic policy reaction, may itself discourage and delay investment decisions, leading to more persistent negative effects on supply-side conditions.

The possible contraction in demand, as a result of factors such as higher uncertainty, lower real incomes and poorer financial conditions, may have a beneficial effect in terms of reducing inflationary pressures, but it would boost risk of a decline in

economic activity. Fiscal policy is thus faced with a certain trade-off, since expansionary measures to sustain activity, especially if they are not selective, may help to sustain price growth.

In view of these risks, the main vulnerabilities[3] of the Spanish economy and financial system include:

V1. High level of government debt.

The general government deficit in Spain has declined in 2022 to date to 4.6% of GDP in June 2022, 2.3 percentage points (pp) lower than at end-2021. This reduction has been faster than was anticipated in the previous macroeconomic projections. The public debt-to-GDP ratio is expected to remain stable in 2022 with respect to the value observed at end-2021 (118.4% of GDP). It will then decline slightly, driven by growth in nominal GDP, to 109.9% of GDP in 2024.

However, the existing high level of public debt entails vulnerability for the Spanish economy, particularly in a setting in which the monetary normalisation process has raised the cost of public debt.

The 1-year and 10-year interest rates on new issues of Spanish public debt increased by 258 basis points (bp) and 284 bp, respectively, between December 2021 and October 2022. The average cost of debt (1.69% in October 2022) has risen only slightly in recent months and stands slightly above the rate at end-2021 (1.64%). The repayment of debt that was issued at comparatively higher interest rates during the global financial crisis and the fact that Spanish sovereign debt maturities are still relatively long are helping to contain the average cost of debt. However, these beneficial effects are expected to gradually fade if the current period of tighter monetary conditions persists over time.

Moreover, the current highly uncertain environment could lead to greater risk aversion in financial markets. Indeed, international financial markets have become increasingly sensitive to adverse economic news. A clear recent example was the negative reaction of sovereign debt markets in the UK to the announcement by the former UK Government of measures that could significantly drive up the deficit and the level of public debt. The subsequent rectification of this announcement and the Bank of England's intervention seem to have contained the initial adverse effects.

In Europe, sovereign debt spreads have seen only a minor increase since the end of 2021 (by approximately 38 bp in the case of Spain). The approval in July of the

3 In this report, vulnerabilities are defined as economic and financial conditions that increase the impact or probability of materialisation of risks to financial stability.

Transmission Protection Instrument (TPI) by the ECB is an important factor for mitigating this vulnerability.

Overall, Spanish government indebtedness is expected to continue at high levels in the coming years (see Chart 6) and to remain a vulnerability to the potential deterioration of financing conditions, as there would be little fiscal space to react to the materialisation of new risks.

In the current setting of high inflation and public indebtedness fiscal policy measures should be targeted and focus on lower-income households, which bear the brunt of inflation, and on the firms most vulnerable to this shock. Moreover, the measures should be temporary to avoid a further increase in the structural budget deficit.

In parallel, a fiscal consolidation process needs to be launched that will help progressively reduce the current fiscal imbalances and gain fiscal space to respond to future shocks. In this regard, it should be borne in mind that the roll-out of investment projects under the European Next Generation EU (NGEU) programme already represents an appreciable fiscal stimulus (even if their implementation is experiencing some delays). Thus, the combination of the large-scale use of the European funds – which does not directly affect the budget deficit but does have a positive impact on economic activity – and the commencement of a fiscal consolidation process would make it possible to continue providing some support to economic activity (which may be necessary in a setting in which pre-pandemic GDP levels have not yet been recovered), while gradually reducing the high structural budget deficit of public finances in Spain.

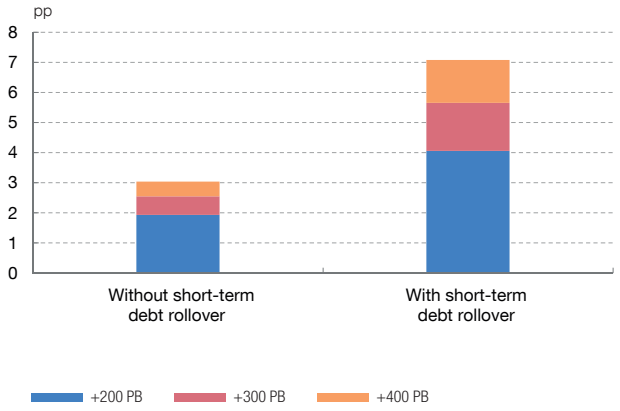
In any event, it should be noted that offsetting the adverse effects of the current supply-side shock also calls for ambitious policies to boost productivity growth and potential GDP. The role of the NGEU funds could also be particularly important to accompany and finance the necessary structural reforms.

V2. The financial weakness of households and firms.

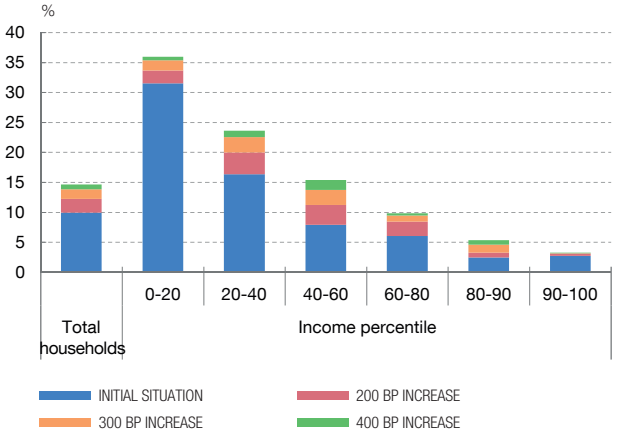
The recovery in business turnover and profits continued in the first half of 2022, particularly in the sectors most affected by the pandemic, which are now benefiting most from the lifting of the health-related restrictions. Based on the most recent data, the first six months of the year saw only some signs of financial deterioration in sectors sensitive to energy costs and in those least affected by the health situation (e.g. manufacture of chemicals, manufacture of plastics, the wood industry and the basic metals sector).

However, mounting inflationary pressures and tighter financing conditions have spread financial vulnerabilities beyond the corporate sectors most affected by the

7 ESTIMATED INCREASE IN NFCs' MEDIAN DEBT BURDEN DUE TO AN INTEREST RATE RISE (a) (b)



8 IMPACT OF AN INTEREST RATE RISE ON THE PERCENTAGE OF HOUSEHOLDS WITH A HIGH NET DEBT BURDEN. BREAKDOWN BY INCOME PERCENTILE (c) (d)



SOURCES: Banco de España and EFF (2017).

a The debt burden is defined as Financial costs / (Gross operating profit + Financial revenue). Firms with no financial costs are excluded from this calculation.
b In the case where no short-term debt rollover is assumed, the interest rate rise is fully passed through to long-term floating-rate debt and loans. The case with short-term rollover differs from the foregoing case in that the interest rate rise is passed through also to short-term debt and loans.
c The increase in debt service expenses is calculated for households with floating-rate debt. It is assumed that short-term interest rate rises are passed through in full to the interest rate on floating-rate debt.
d The net interest burden is considered to be high when the ratio of (Debt service expenses - Interest income from deposits) / Household income is higher than 40%. Households without debt are excluded from this calculation.

pandemic or more dependent on energy inputs. The rising cost of energy and other inputs will lead to a more widespread reduction in real business income, thereby eroding these agents' ability to pay. Risks to activity growth may also limit firm's ability to offset higher costs through turnover growth.

Firms' bank financing costs have been gradually rising up to August 2022, as the rise in market interest rates was only passed through partially – and by less than in the past. A more marked increase was seen in the cost of corporate financing on wholesale markets, partly because of higher corporate risk premia.

Liquidity risks and financial pressure on firms are expected to increase further insofar as interest rate rises continue and gather pace and it becomes necessary to roll over corporate debt at shorter maturities (see Chart 7). However, these rises are being mitigated by the medium and long-term financing obtained in recent years via State-backed loans, a high proportion of which are at fixed rates.

Meanwhile, households have experienced sustained improvements in their gross income in recent quarters, mainly due to the sound performance of the labour market. In 2022 Q2 their gross disposable income was 3.2% higher than before the health crisis, in nominal terms. They have also accumulated savings and financial assets in recent years, albeit unevenly across households, according to their income levels.

Despite this, it appears that high inflation and rising interest rates are already increasing the financial pressure borne by households, particularly those with lower incomes. In particular, the surge in energy prices appears to be leading better-off households to save less and forcing lower-income households to reduce their spending on non-energy goods. The pass-through of market interest rate rises to the cost of bank financing to households is still moderate. However, the cost of loans is expected to pick up particularly over the coming quarters, as mortgage rate revisions incorporate EURIBOR hikes, thereby adding to the financial pressure on households (see Chart 8). This would be somewhat mitigated by the increase in recent years in the share of fixed-rate mortgages, which accounted for 27.1% of the stock in August 2022. Moreover, risks to economic growth could lead to higher unemployment, further straining households' income and ability to pay.

Although the financial pressure on households and firms is increasing more generally, the heterogeneity in these developments still needs to be monitored to detect the most vulnerable segments and measure the impact on financial stability.

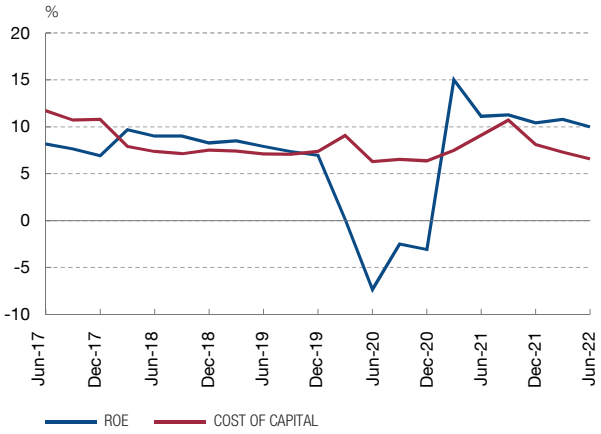
V3. Weaknesses in the financial intermediation capacity of the financial sector.

On the data available for 2022 Q2, the profitability of the Spanish banking sector remained at the level reached in 2021, after the adverse effects of the health crisis had been overcome. Thus, unlike in previous periods, in the first half of the year ROE (10%) stood comfortably above the estimated average cost of capital (7%), (see Chart 9), sending positive signs about the ability to generate capital. In the same vein, the Q3 results for listed banks confirm the favourable trend in bank profitability observed in the first half of the year. At the same time, institutions' capital levels are higher than before the pandemic and NPL ratios have continued to decline.

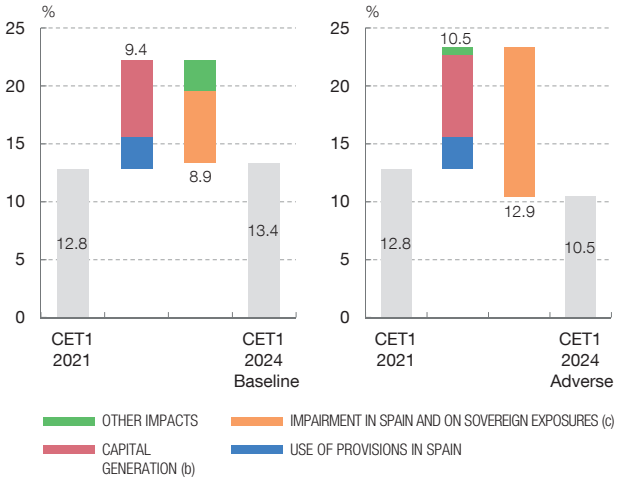
Although this current favourable situation in the banking sector, the global macro-financial environment may have a significant negative impact on banks' income statement. Higher interest rates will boost banks' income, but will also put upward pressure on their financing costs. Factors such as the banking sector's current ample liquidity and the negative interest rate level at the outset of the present rate-rise cycle have contributed to bank deposit rates not yet reflecting the market interest rate rise. However, the pass-through of interest rate hikes to the cost of deposits is expected to increase in the future and to be higher in more adverse macro-financial scenarios. Moreover, the increase in households' and firms' financing costs and the slowdown in their income will reduce their ability to pay, which could drive up banking costs through impairment charges.

Against this backdrop, a legislative proposal is being discussed in Parliament to impose a temporary levy (in 2023 and 2024) on banks whose 2019 fee and interest income exceeded a certain level (€800 million). A 4.8% tax rate would be applied

9 ROE AND COST OF CAPITAL IN THE BANKING SECTOR



10 FLESB STRESS TESTS. IMPACT ON THE CET1 RATIO IN THE BASELINE SCENARIO (L-H CHART) AND ADVERSE SCENARIO (R-H CHART) (a)



SOURCE: Banco de España.

a The net effect of positive (negative) flows is indicated by the figure above (below) the bar in question. The initial and final CET1 ratios are presented as "fully-loaded". Other impacts include, among other effects, the change in RWAs between 2021 and 2024 and the effect of ICO guarantees. Aggregate results, including institutions directly supervised by both the SSM and the Banco de España.
b This variable includes net operating income in Spain and net income attributable to business abroad. Thus, the funds that the banking group as a whole may generate are compared with the impairment losses in Spain and on the sovereign portfolio (the focus of these tests).
c This variable shows the projection over the three years of the exercise of gross losses due to credit portfolio impairment for exposures in Spain and other types of losses (associated with the fixed-income portfolio, the management of foreclosures and the sovereign portfolio).

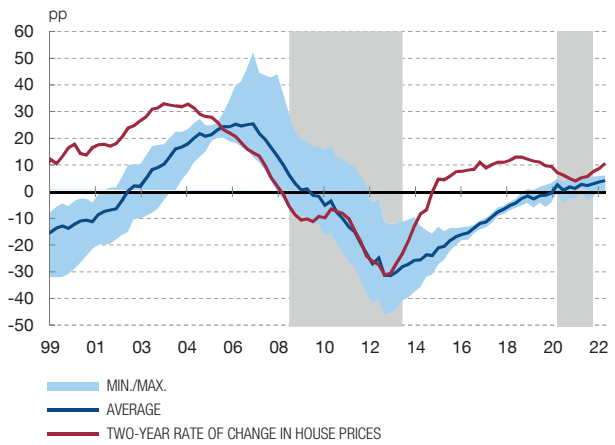
to the 2022 and 2023 net interest income and net fee and commission income. This levy is expected to raise €1.5 billion in each year, which would reduce the sector's profits.

In relation to the non-bank financial sector there is also some concern worldwide about certain open-ended investment funds that have accumulated risk exposures in recent years and have very tight liquidity positions.[4] In Spain, investment funds have better liquidity positions. However, like other financial intermediaries and the banking sector, they are susceptible, particularly as regards the value of their holdings of financial instruments and their financing conditions, to global financial market corrections prompted by the potential stress that could arise in these segments of non-bank financial intermediation, which have seen a greater build-up of risks.

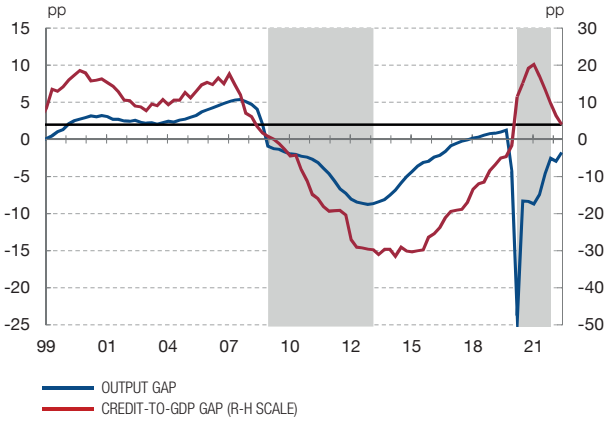
As already noted in this year's Spring FSR, amid the current extraordinary uncertainty banks must maintain a prudent stance, with adequate and early recognition of risks, to preserve confidence in the sector and the ability to sustain the flow of financing to the economy. In particular, it is essential that they continue to exercise a high degree of prudence in their provisioning and capital planning policies.

4 The International Monetary Fund analyses this global risk in detail in Chapter 3 of its latest Global Financial Stability Report.

11 INDICATORS OF HOUSE PRICE IMBALANCES (a) (b)



12 CREDIT-TO-GDP GAP AND OUTPUT GAP (c)



SOURCES: INE and Banco de España.

a The areas shaded in grey represent the periods of the two financial crises in Spain since 2009: the last systemic banking crisis (2009 Q1-2013 Q4) and the crisis triggered by the COVID-19 pandemic (2020 Q1-2021 Q4). Data updated as at June 2022.

b The shaded area represents the minimum and maximum values of the four indicators of imbalances in house prices. The indicators are: (i) the real house price gap; (ii) the house price-to-household disposable income ratio gap; (iii) the ordinary least squares (OLS) model which estimates house prices based on long-term trends in household disposable income and mortgage interest rates; and (iv) the error correctionmodel which estimates house prices based on household disposable income, mortgage interest rates and fiscal effects. The long-term trends are calculated for all indicators (i) to (iv) using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 400,000. Indicators (i) to (iv) and the two-year rate of change in house prices have an equilibrium value of 0.

c The output gap is the percentage difference between observed GDP and potential quarterly GDP. Values calculated at constant 2010 prices. See P. Cuadrado and E. Moral-Benito (2016), "Potential growth of the Spanish economy", *Occasional Paper* No 1603, Banco de España. The credit-to-GDP gap is calculated as the difference, in percentage points, between the observed ratio and the long-term trend calculated using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 25,000. This parameter is calibrated to the financial cycles historically observed in Spain. See J. E. Galán (2019), "Measuring credit-to-GDP gaps. The Hodrick-Prescott filter revisited", *Occasional Paper* No 1906, Banco de España. Data available up to June 2022. The areas shaded in grey represent the periods of the two financial crises in Spain since 2009: the last systemic banking crisis (2009 Q1-2013 Q4) and the crisis triggered by the onset of the COVID-19 pandemic (2020 Q1-2021 Q4). The horizontal black line represents the 2pp CCyB activation threshold for the credit-to-GDP gap.

The stress tests conducted by the Banco de España, based on a potential adverse scenario stemming from the materialisation of the current risks to growth, inflation and financing conditions, show that the sector's aggregate solvency remains at adequate levels (see Chart 10), albeit unevenly across institutions. These exercises point to a conflicting impact of interest rate rises: on one hand they would improve the capacity to generate net interest income, but on the other they would considerably worsen provisioning. In any event, should the rises occur in an adverse scenario of contracting GDP and tightening risk premia, the results indicate a negative impact on the sector's profitability and capital.

V4. Incipient signs of real estate market imbalances.

The Banco de España continues to closely monitor the situation in the real estate market. The house price growth rate remained high in 2022 Q2, with a year-on-year rate of change of 8%, slightly down from 8.5% in the previous quarter. In this regard, indicators of price imbalances in this market continue to show signs of overvaluation, which have been evident since mid-2021 (see Chart 11). These signs remain contained for the time being.

As for the indicators of activity, house purchases continued to grow strongly in 2022 Q2 (by 19.7% year-on-year), mainly due to second-hand home purchases. However, the July and August year-on-year growth figures of 8% and 14.9%, respectively, suggest a slowdown that will only be confirmed in the coming months. In line with the growth in transactions, the flow of new lending for house purchase increased by 10.9% in 2022 Q2. However, the stock of mortgage credit grew by just 1.3% year-on-year in June 2022, given the sizeable volume of repayments and the relatively small share of new loans as a proportion this stock. Lending for construction activities and real estate development continued to contract to June 2022, with the year-on-year rate of change standing at -6.7%, in keeping with the negative developments in the supply of new housing.

Credit standards in relation to collateral values for new residential mortgages did not change significantly in 2022. In particular, despite the strong growth in the volume of transactions since 2021, the share of mortgages with high loan-to-value (LTV) or loan-to-price (LTP) ratios has not increased. However, the ratios of house price and average amount of new mortgages to average household disposable income have been rising steadily since 2014 and deserve particular attention. In addition, high loan-to-income (LTI) ratios are concentrated to a larger extent among low-income households, which could be more vulnerable to the materialisation of macroeconomic risks.

As mentioned above, the rise in benchmark rates was passed through only moderately to interest rates on new mortgages up to the end of 2022 Q2. Moreover, the spreads between these rates and the benchmark continued to narrow, particularly in fixed-rate loans, which poses certain risks to their profitability in the face of potential increases in the cost of bank borrowing.

Against this backdrop, tighter monetary conditions and the heightened uncertainty would help limit the build-up of real estate risks in the short term, particularly by reversing the downward trend in interest rate spreads over the coming quarters. However, it cannot be ruled out that, should macroeconomic risks to growth and headline inflation materialise, the incipient signs of imbalance could contribute to slightly amplifying the adverse effects on economic activity and banking sector solvency.

Macroprudential policy stance

The Spring 2022 FSR argued that heightened uncertainty and the absence of any indications of systemic financial imbalances building up in Spain made it advisable to maintain a loose macroeconomic stance. Since then, the degree of uncertainty has increased and short-term risks linked to a larger pick-up in inflation and a slowdown in economic growth have risen in particular. Moreover, there appear to be no signs of a widespread rise in financial imbalances (see Chart 12).

These developments strengthen the case for not activating macroprudential measures, such as capital requirements or limits on credit standards in Spain. In particular, the assessment of the available indicators is consistent with holding the countercyclical capital buffer (CCyB) rate at 0%. Activating these measures now could prove pro-cyclical and ultimately curb new lending in a period of materialising risks linked to real activity and, in particular, to supply strains in energy goods markets. In any event, the indicators of a build-up of systemic risks (e.g. the debt servicing ratio, which will probably be driven up in coming quarters by higher interest rates) need to be closely monitored, paying special attention to the residential real estate sector and credit standards.

Warning issued by the European Systemic Risk Board

On 22 September 2022 the European Systemic Risk Board (ESRB) issued a warning on vulnerabilities in the EU financial system (see Chapter 3.1). The ESRB's assessment of the risks to financial stability at European level is consistent with that of the Banco de España included in this report. As noted in the ESRB warning and in a statement by the ECB's Governing Council, in this highly uncertain environment it is necessary and desirable for the national macroprudential policy response to be tailored to each country's specific, structural and cyclical conditions and, especially, the intensity of the imbalances detected. Against this backdrop, the decision to maintain the CCyB rate at 0% and not activate other macroprudential measures is founded on the analysis of Spain's specific conditions, which differ significantly from those in other European countries, where there are greater signs of imbalance, particularly in the real estate sector.

1

RISKS LINKED TO THE MACRO-FINANCIAL ENVIRONMENT

Despite the economic growth observed in 2022 H1, soaring consumer and input prices have contributed to a slight deterioration in the financial and economic position of firms and households, particularly in some of the more vulnerable segments. In addition, higher interest rates have had an adverse effect on indebted agents' disposable income. The impact on debt servicing has so far been very moderate. However, it will become more important in the coming months as the pass-through of higher market rates to the cost of debt is completed and the monetary policy normalisation process continues. In the short and medium term, a considerable economic slowdown, whose scale is highly uncertain, is expected in Spain and globally, and adverse macroeconomic scenarios involving a downturn in activity cannot be ruled out if certain risks, linked mainly to the economic fallout from the war in Ukraine, materialise. Under these scenarios, households' and firms' debt servicing capacity would be further impaired, which could adversely impact financial institutions' balance sheets. The adverse impact that this would have on financial stability could be amplified by the possibility of further drops in financial asset prices and of these declines spreading to real estate assets, particularly in the event of a disorderly correction. According to the latest available data, real estate market activity and prices continue to grow at high paces, although there are some signs of deceleration, which will not be confirmed until new information becomes available. Indeed, higher uncertainty, the reduction in households' real income and tighter financial conditions can all be expected to curb the growth of the real estate market in the coming quarters.

1.1 Macroeconomic environment

1.1.1 Systemic and materially significant countries

2022 has so far been marked by the outbreak of the war in Ukraine, which has driven up energy and food commodity prices significantly and exacerbated global inflationary pressures. The prolongation of the war, with Russian gas and oil exports gradually being interrupted, and the persistence of high inflation rates have adversely affected global economic activity, which has slowed more than expected.

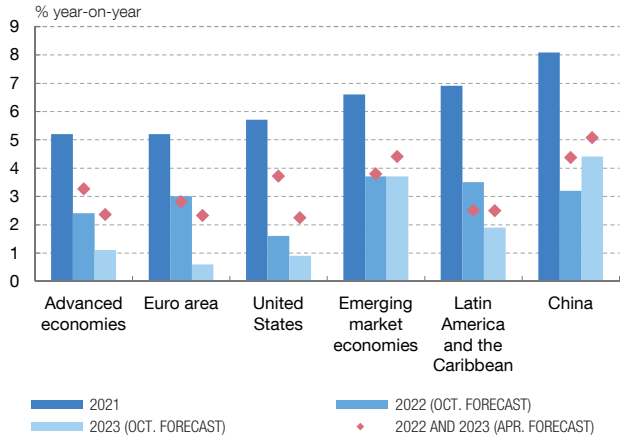
The growth outlook for 2022 and 2023 has deteriorated in practically all areas, mainly in the advanced economies (see Chart 1.1.1). Despite the bottlenecks that have affected global value chains since 2021 easing slightly, higher inflation – which has triggered a fall in real disposable income and a tightening of financial conditions – has increased the probability of a recession in the main developed economies (see Chart 1.1.2). Indeed, the United States recorded negative gross domestic product (GDP) growth

Chart 1.1

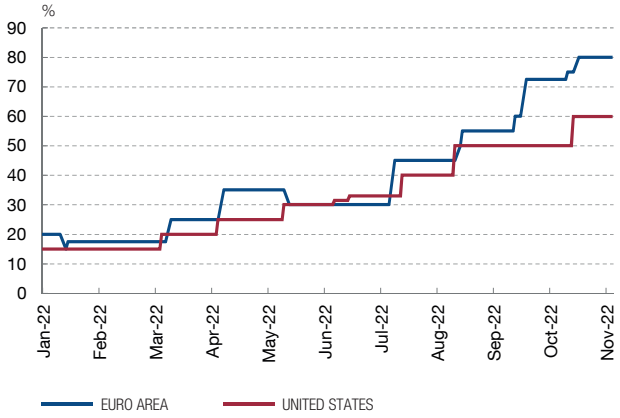
GLOBAL ECONOMIC ACTIVITY IS SLOWING AMID HIGHER INFLATION AND MONETARY POLICY TIGHTENING

Growth forecasts have been revised down since the last FSR and the probabilities of a recession in the advanced economies have increased. Inflation rates have surprised on the upside and have led to more restrictive monetary policies in the main economies.

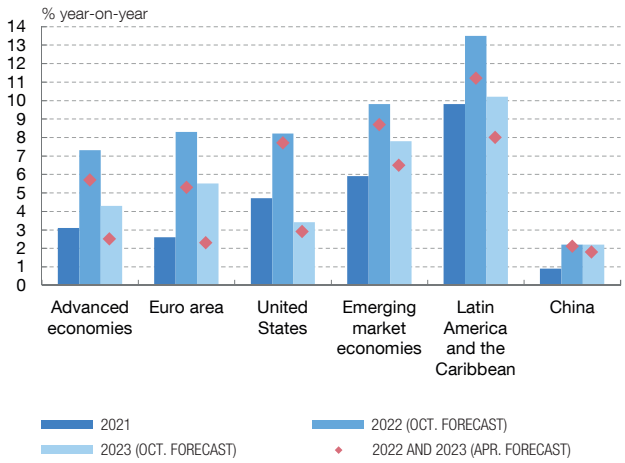
1 GDP GROWTH FORECASTS (2021-2023)
IMF WEO October 2022



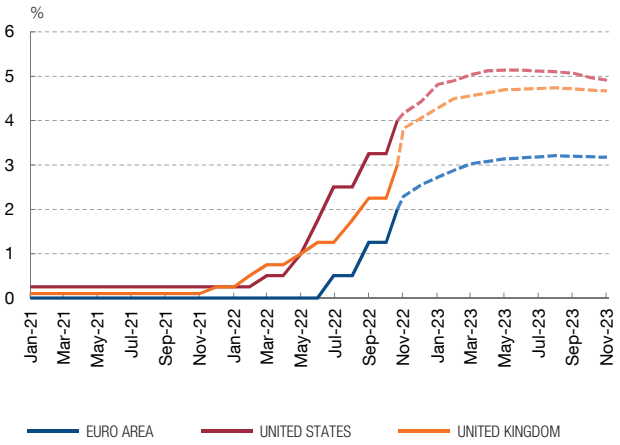
2 PROBABILITY OF A RECESSION ONE YEAR AHEAD. EURO AREA AND THE UNITED STATES (a)



3 INFLATION (2021-2023)
IMF WEO October 2022



4 MONETARY POLICY: POLICY INTEREST RATES (b)



SOURCES: IMF, Bloomberg, national statistics and Refinitiv.

a These indicators are based on responses to surveys conducted by Bloomberg on the probability of a recession one year ahead. The indices used are: US Recession Probability Forecast Index and Eurozone Recession Probability Forecast Index.
b The broken lines denote futures-based expectations. The following indices are used: 3-Month SONIA Index, 30-Day Federal Funds Composite (Chicago Board of Trade) and 3-Month EURIBOR.

in 2022 Q1 and Q2, although in Q3 GDP growth returned to positive territory. Euro area activity slowed in 2022 Q3, with these dynamics expected to intensify in 2022 Q4 and 2023 Q1, following an upturn in 2022 H1 boosted by all restrictions on the economic sectors hardest hit by the pandemic being lifted. Different international organisations and analysts have significantly revised down their latest euro area GDP growth forecasts, pointing to euro area GDP stagnating in 2023, after growing at around 3% in 2022.

The risks to global growth are clearly tilted to the downside. In the euro area, the main source of risk is associated with the uncertain consequences of the drastic reduction in the supply of gas from Russia and will also depend on the severity of the winter. Europe is particularly exposed to the effects stemming from the invasion of Ukraine, due to its geographical proximity and, particularly, to its high dependence on fossil fuel imports from Russia. More broadly, heightened geopolitical tensions in different parts of the world could affect, in the medium term, the globalisation of the world economy, thereby exacerbating the bottleneck issues (see Box 1.1). Another source of risks would stem from synchronised interest rate hikes and the knock-on tightening of financial conditions against a backdrop of high government and private debt in many economies. An abrupt deceleration in China because of its zero-COVID strategy and its real estate crisis could also have adverse effects on world trade and the global economy.

Global inflation has remained high since the last Financial Stability Report (FSR) was published in the spring, with successive upward revisions to the forecasts. The persistence of the inflationary pressures is attributable to different factors, including most notably global supply chain disruptions, higher energy prices as a result of the Russian invasion of Ukraine, the strong recovery in demand since 2021 and, in some cases, such as the United States, increased labour costs. Inflation forecasts for 2022 and 2023 have been revised up across the board (see Chart 1.1.3), although inflation is expected to ease from next year. In the euro area, the significant increase in food prices and the depreciation of the euro against the dollar have been additional factors behind the persistence of inflation. The recent fall in energy input prices could ease inflationary pressures if it persists over time. The latest inflation forecasts have been revised up significantly, expecting euro area inflation of over 8% in 2022 and over 5% in 2023.

In response to high and persistent inflation, central banks have tightened their monetary policy stance with some synchronisation. For example, among the main advanced economies, the Federal Reserve Board, the ECB and the Bank of England[1] have quickened the pace of interest rate hikes (see Chart 1.1.4), in order to bring inflation back to values compatible with monetary policy targets and keep expectations anchored. Policy interest rate hikes, which are expected to continue in the coming months, together with the increase in risk premia due to greater uncertainty, have resulted in tighter global financial conditions and a widespread, albeit uneven across countries, increase in financing costs for firms and households, against a general backdrop of high government and private debt levels. Although the measures are heading in the same direction, the differences in the forcefulness of the interest rate hikes and their announcement dates mean the monetary policy

1 However, the Bank of England also had to intervene by buying government bonds to stabilise longer-term interest rates and the exchange rate following the financial market response to the announcements by the previous UK government of a more expansionary fiscal policy.

adjustments are having slightly heterogeneous effects on the different advanced economies. These differences are also being reflected in exchange rates, likewise affected by the heterogeneous effects of higher commodity prices on the different countries and geographical areas.

More restrictive monetary policies globally and the appreciation of the dollar have given rise to a tightening of financial conditions in emerging market economies. Thus, in 2022 to date emerging market economies have recorded stock price drops, higher risk premia and capital outflows (see Chart 1.2.1). The markets in Latin America have performed relatively better overall, helped by the rise in commodity prices and by the early monetary policy response in those countries. Meanwhile, markets have performed more poorly in eastern Europe and, especially, in China, which recorded high portfolio capital outflows. Surging inflation in the emerging market economies could have peaked or be close to peaking, and the analysts' consensus expects it to stand, in most cases, at values just slightly above pre-pandemic levels at end-2023 (see Chart 1.2.2). Against this backdrop, central banks in Latin America and eastern Europe maintained the contractionary monetary policy stance (see Chart 1.2.3). The monetary authorities of Emerging Asia (excluding China, which is facing a considerable adjustment to its oversized real estate sector) followed suit, but Russia and Turkey did not. The widespread tightening of financial conditions could have particularly adverse effects on those emerging market economies with high levels of debt and greater external financing needs. Among the systemically important countries for Spanish banks, Turkey stands out as one of the vulnerable countries.

The following can be noted in regard to the main emerging market countries to which Spanish banks are exposed:

In **Mexico,** despite GDP still not having reached pre-pandemic levels, the Banco de México continued tightening the monetary policy stance in order to contain high inflation, with underlying inflation reaching rates of over 8% in August. Credit to the private sector remained weak, especially lending to firms, against a backdrop of a low NPL ratio and high solvency and liquidity ratios.

Brazil's economy grew more than expected in the first half of the year, driven by private consumption. The inflation rate began to ease from April, thanks in particular to the tax cuts introduced by the government to contain fuel prices. However, underlying inflation has remained above 8%. The Banco Central do Brasil continued to raise the policy interest rate, albeit more slowly than in prior months, to 13.75% in August 2022. In addition to the risks common to the region's other economies, the outlook for Brazil is also influenced by fiscal policy. This is because the country has a very high level of government debt, whose cost is growing as it is largely indexed to policy interest rates and the inflation rate.

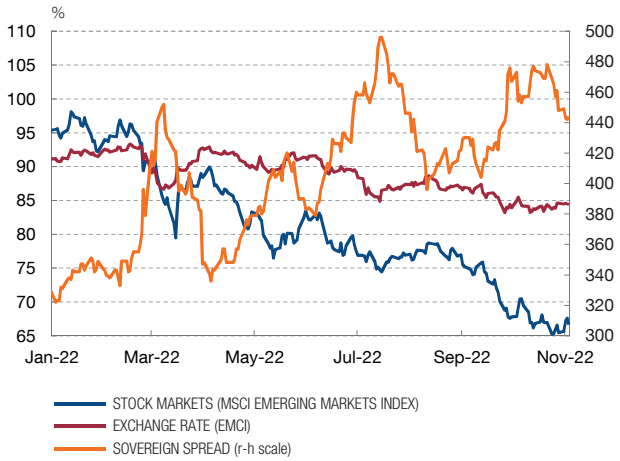
In **Turkey,** the economy continued to display strong momentum in the first half of the year, with GDP growing 7.5% year-on-year, while some of its main imbalances

Chart 1.2

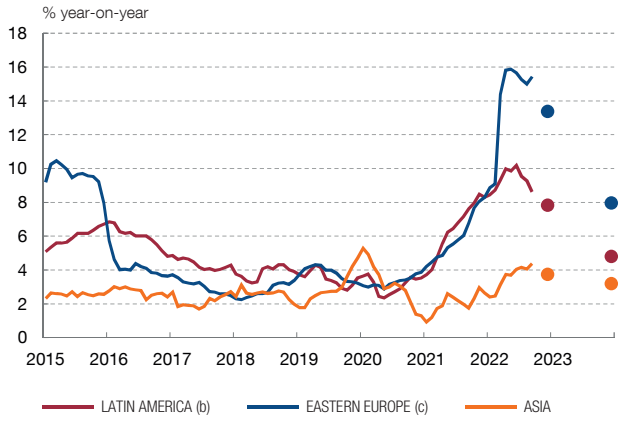
MONETARY POLICY REMAINS CONTRACTIONARY IN THE EMERGING MARKET ECONOMIES, AGAINST A BACKDROP OF INFLATION AND FINANCIAL STRESSES THAT ARE EASING SLIGHTLY

Financial markets in the emerging market economies have been particularly affected by the tightening of global financial conditions in 2022, although there have been some signs of the impact easing in recent months. Inflation rates peaked in June, and at end-2023 they are projected to be close to pre-pandemic levels, except for in eastern Europe. With the notable exception of Turkey, the central banks maintained a very contractionary monetary policy stance. September saw the end of the interest rate hike cycle in Brazil, the country that began the restrictive cycle earlier.

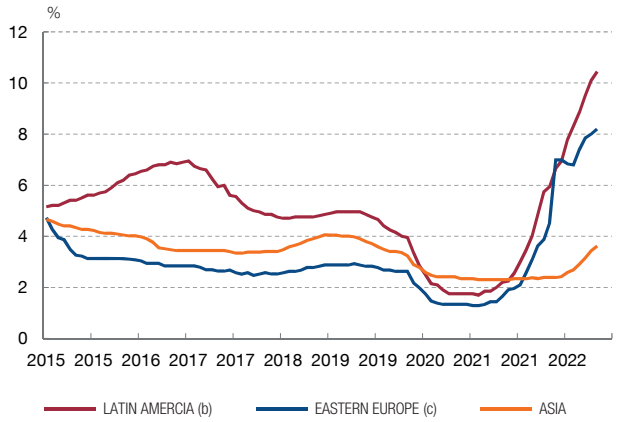
1 FINANCIAL CONDITIONS



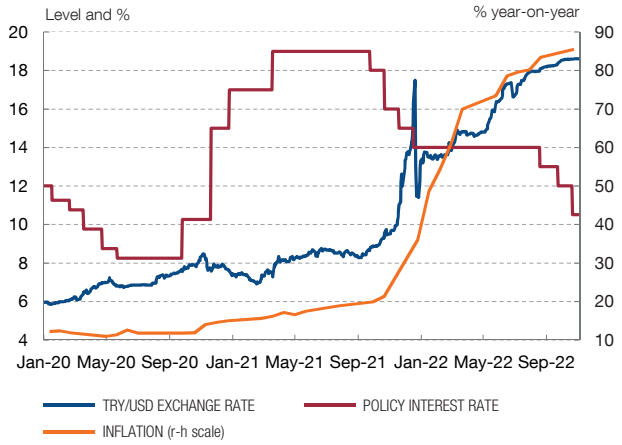
2 INFLATION (a)



3 POLICY INTEREST RATES



4 TURKEY: INFLATION, INTEREST RATE AND EXCHANGE RATE



SOURCES: Refinitiv, Consensus Forecasts and national statistics.

a The dots denote inflation expectations for end-2022 and end-2023, according to the Consensus Forecasts, in October 2022.
b Excluding Argentina.
c Excluding Turkey.

worsened further (see Chart 1.2.4). Inflation continued to surge, reaching 85.5% year-on-year in October; even so, the Central Bank of the Republic of Turkey has cut its reference interest rate by a total of 250 basis points (bp) at its last three monetary policy meetings, to 10.5%. It also introduced measures to control the growth of lending (except lending to firms in sectors of interest) and to limit its cost. Lastly, higher energy import prices and the increase in gold imports, possibly due to it

acting as a safe-haven asset, have enlarged the current account deficit, which amounted to 4.8% of GDP halfway through the year.

1.1.2 Spain

After the upturn in activity in Q2, the Spanish economy has lost steam in Q3, due to the effects of inflation on households' and firms' income. Despite the boost from tourism expenditure in the absence of health restrictions, the Spanish economy decelerated in Q3, weighed down by the same factors affecting global activity. High inflation rates have gradually spread to an increasingly larger set of goods and services, impacting cohorts unevenly. Lower-income households have experienced higher inflation because staple goods, whose prices have shown a greater relative increase in recent times, account for a larger share of these households' spending. Consumption could be further affected, as the current highly uncertain environment may prompt an increase in precautionary saving, which seeks to mitigate possible further declines in income.

In the medium term, economic growth has also been revised down because inflation is proving to be higher and more persistent than expected. On the latest Banco de España projections, GDP will end 2022 around 2.3 percentage points (pp) below its pre-pandemic level (see Chart 1.3.1).[2] In addition, thereafter the recovery will be weaker than previously projected due to the surge in prices and costs. Indeed, the upward revision to inflation in 2023, in both Spain and the euro area, is also becoming attributable to consumption basket items other than the energy component, i.e. food and underlying inflation. Higher energy prices have been passed through to final prices and costs more in recent months. The recent drop in energy prices could help alleviate inflationary pressures later on provided it persists over time.

The tightening of financial conditions and the deterioration in the external environment are also lowering growth expectations. As mentioned above, higher inflation has led both the ECB and other central banks to embark on monetary policy normalisation, by raising policy interest rates. Such interest rate hikes have started to feed through to the cost of financing for Spanish firms and households, albeit at a slower pace than in the past (see Box 1.2). In any event, this will tend to increase their debt burden and reduce their disposable funds for consumption and investment. In addition, the recent considerable deterioration in the external environment is also undermining Spanish export expectations, despite the gain in competitiveness that the euro's depreciation against the dollar represents.

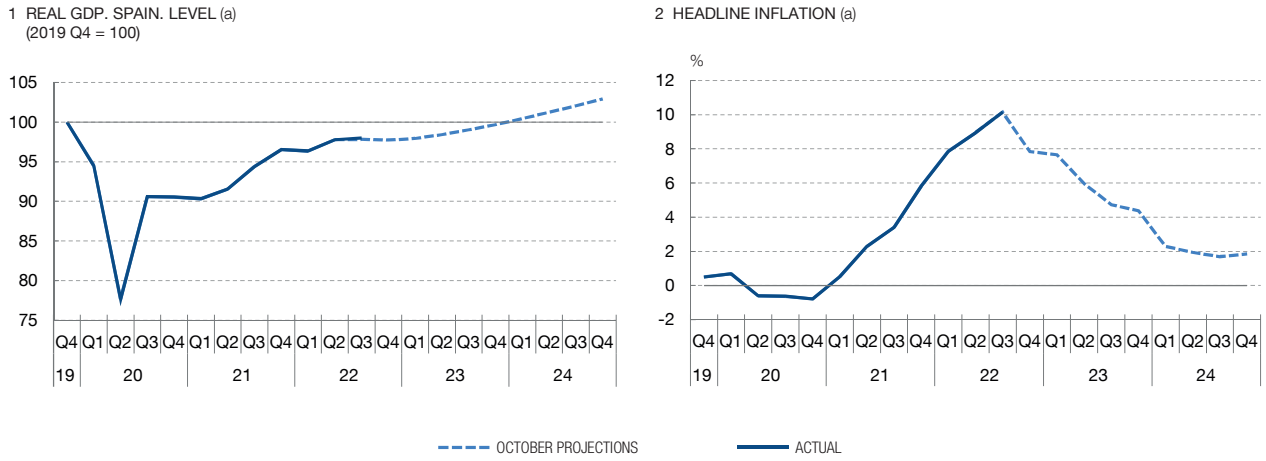
Some factors – such as the Next Generation EU (NGEU) funds, the gradual easing of global supply chain disruptions and continued inbound tourism

2 See Box 1, "Macroeconomic projections for the Spanish economy (2022-2024)", "Quarterly Report on the Spanish Economy", *Economic Bulletin* 3/2022, Banco de España.

Chart 1.3

THE SPANISH ECONOMY IS FEELING THE ECONOMIC EFFECTS OF THE WAR IN UKRAINE: INFLATION THAT IS PROVING HIGHER AND MORE PERSISTENT THAN ANTICIPATED AND THE DETERIORATION IN THE EXTERNAL ENVIRONMENT ARE IMPACTING AGENTS' PURCHASING POWER AND CONFIDENCE

Since the spring FSR, the deterioration in the economic outlook has led to a downward revision to growth and an upward revision to inflation. A potential worsening of the effects of the energy crisis, due to severe rationing of gas in Europe, is the main downside risk to Spanish economic growth. However, there are some factors underpinning it, such as the roll-out of the NGEU projects, the gradual disappearance of the global value chain bottlenecks and the expected buoyancy of inbound tourism expenditure.



SOURCES: Banco de España and INE.

a The charts depict the actual GDP and inflation figures up to 2022 Q3 and, from 2022 Q2, the October 2022 Banco de España macroeconomic projections.

flows – could support activity. The roll-out of NGEU projects[3] should support activity in the future, despite something of a delay in their execution. In addition, despite the risks identified, on the latest data global bottlenecks are easing slightly and the baseline scenario envisages their gradual disappearance over the course of 2023. However, the recent improvement in delivery times could be a further symptom of weak global demand. In turn, the resilience of tourism expenditure will also boost activity further.

The outlook for the Spanish economy under the baseline scenario is subject to an extraordinary level of uncertainty and the risks are tilted to the downside. The baseline scenario for Spain envisages inflation easing towards a level close to 2% in 2024 (see Chart 1.3.2). However, a potential escalation of the war in Ukraine, which would trigger greater shocks to European energy supply, could drive energy prices higher still and cause inflation to be more persistent and elevated than anticipated. This would affect agents' confidence and purchasing power, and would have a fresh adverse impact on their spending decisions and on unemployment and

3 See previous footnote.

activity. Under this adverse scenario, monetary policy tightening globally more than expected to date and further disruptions to input supply chains in which Russia and Ukraine are important suppliers – not just of oil and gas, but also of cereals and minerals – would also be more likely. This could adversely affect production in the most exposed sectors of activity.

1.2 Financial markets and the real estate sector

1.2.1 Financial markets

Yields on money markets in advanced economies have continued growing, mainly as a result of the monetary policy tightening and of investor expectations for policy interest rates being raised over the coming months at a faster pace than previously expected. The US Federal Open Market Committee has recently accelerated the scheduled pace of policy interest rate rises, with four consecutive hikes of 75 bp. In the euro area, the ECB Governing Council raised its key interest rates by 50 bp at its July meeting and by 75 bp at its September and October meetings, the largest hike in the euro area's history. This, together with the expectations for further policy interest rate increases in the coming months, has resulted in higher interbank market interest rates. At the cut-off date for this report, the 12-month EURIBOR amounted to 2.7%, some 325 bp higher than at end-2021 (see Chart 1.4.1). In any event, the uncertainty over monetary policy remains very high, as reflected by the increase in the implied volatility of 3M-1Y swaps,[4] which continues above its historical average (see Chart 1.4.1).

Higher policy interest rates and expectations for further increases have also fed through to sovereign debt yields. The upward pattern of yields on these markets has steepened since early August due to increased inflationary pressures and statements from some central banks suggesting that monetary conditions would be tighter than expected. Specifically, the yields on ten-year government bonds reached 4.2% in the United States and 2.4% in Germany, values not seen since 2010 and 2011, respectively (see Chart 1.4.2).

In the euro area, corporate spreads and sovereign debt risk premia increased from late April, but their patterns have been more moderate of late (see Charts 1.4.3 and 1.4.4). Risk premia ceased to rise after the ECB announced it would apply flexibility in its asset reinvestment policy and the approval of the new Transmission Protection Instrument (TPI), whose aim is to ensure the effective transmission of its monetary policy. After widening significantly in June, spreads on corporate bonds

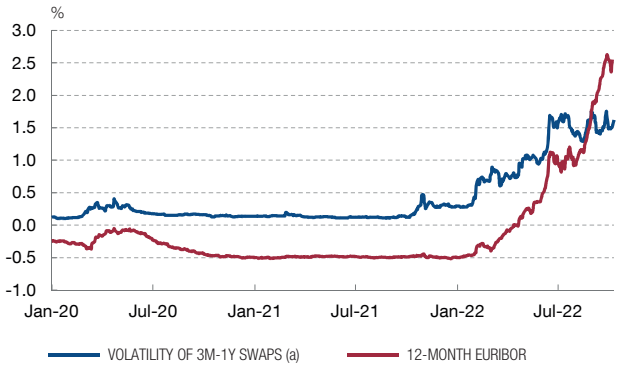
4 Normalised volatility of three-month at-the-money options, whose underlying assets are one-year interest rate swaps that have the 3-month EURIBOR as the floating rate.

Chart 1.4

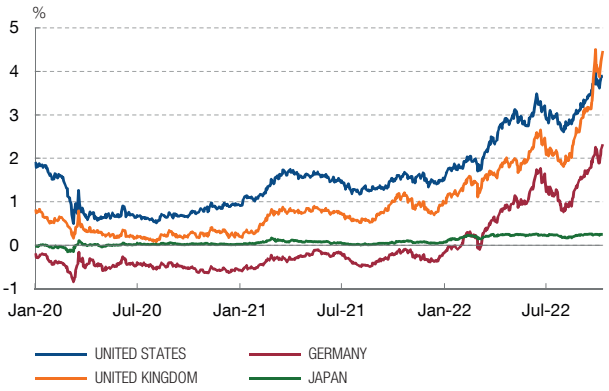
INTEREST RATES ON MONEY AND SOVEREIGN DEBT MARKETS, AND RISK PREMIA ON FIXED-INCOME MARKETS, HAVE CONTINUED TO RISE IN RECENT MONTHS

Yields on money and high-sovereign-rating long-term government debt markets have continued to rise since the last FSR was published, mainly as a result of the tightening of monetary policies and the upward revision to the expected level of policy interest rates. In any event, the uncertainty surrounding monetary policy remains high, particularly in the euro area, as reflected in the implied volatility of 3M-1Y swaps, which stands far above its historical average. Corporate spreads and sovereign debt risk premia in the euro area have increased since April, but their pattern has been more moderate of late.

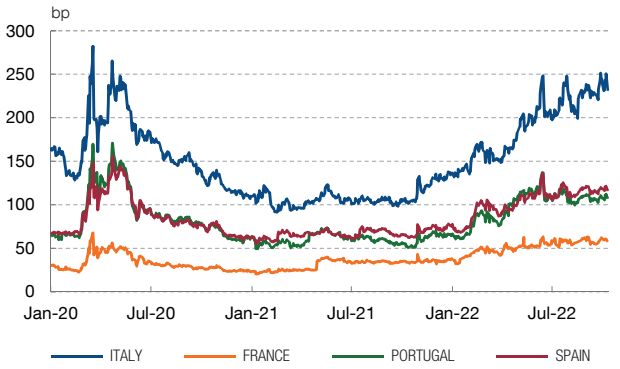
1 EURO AREA: VOLATILITY OF 3M-1Y SWAPS AND 12-MONTH EURIBOR



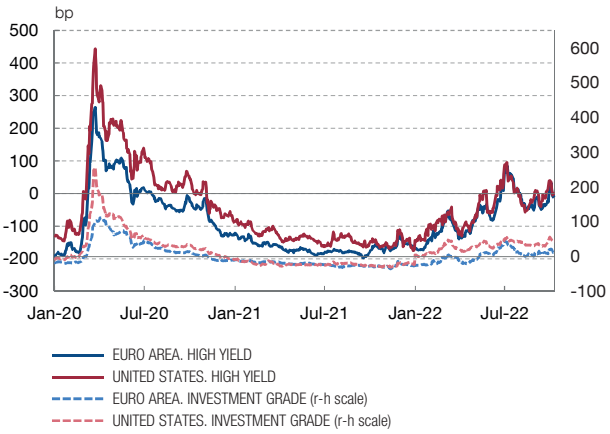
2 10-YEAR SOVEREIGN DEBT YIELDS



3 10-YEAR GOVERNMENT BOND SPREAD AGAINST GERMANY



4 DEVIATIONS FROM THE HISTORICAL AVERAGE OF THE SPREADS ON BONDS ISSUED BY NFCs AGAINST THE SWAP CURVE (b)



SOURCES: Refinitiv Datastream and Banco de España.

a Normalised volatility of three-month at-the-money options, whose underlying assets are one-year interest rate swaps that have the 3-month EURIBOR as the floating rate.

b Deviations calculated vis-à-vis the historical average between 1998 and 2022. High yield: ICE Bank of America Merrill Lynch Non-Financial High Yield Index. Investment grade: ICE Bank of America Merrill Lynch Non-Financial Index.

issued by non-financial corporations have since narrowed, more markedly in the high-yield segment, where they had widened the most at the beginning of the summer.

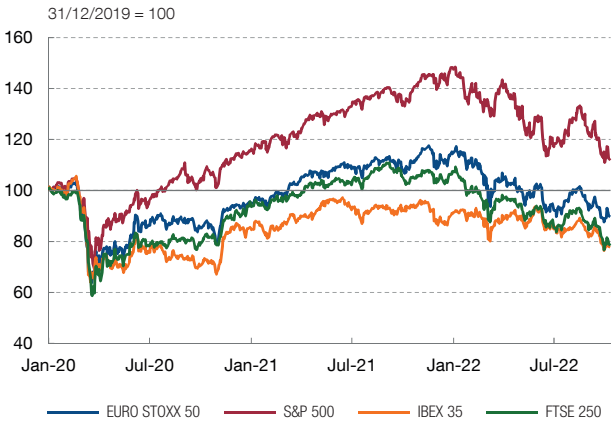
The main stock market indices have recorded declines driven by the rise in long-term interest rates and growing concern about economic developments in different

Chart 1.5

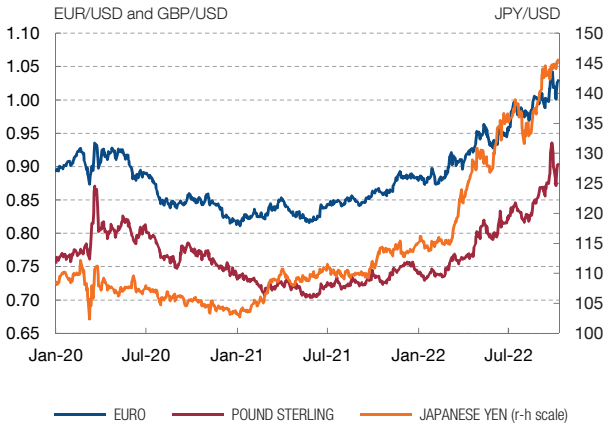
SINCE THE BEGINNING OF 2022 STOCK MARKET INDICES HAVE FALLEN AND THE US DOLLAR HAS APPRECIATED CONSIDERABLY

The main stock market indices have fallen, driven by the rise in long-term interest rates and growing concern about economic developments in different areas. On the foreign exchange markets, the US dollar has appreciated against the main currencies, a development that intensified in the second fortnight of September. This is attributable to actual and expected monetary policy tightening being greater in the United States than elsewhere, the macroeconomic outlook for the United States deteriorating less and the search for safe-haven assets.

1 STOCK MARKET INDICES



2 US DOLLAR EXCHANGE RATES (a)



SOURCES: Refinitiv Datastream and Banco de España.

a An increase (decrease) denotes an appreciation (depreciation) of the US dollar against the other currencies.

areas. The cumulative falls since the last FSR have been similar across the regions. In the United States, monetary policy tightening was more influential, whereas European stock market indices were affected more by the deterioration in the macroeconomic outlook. Since publication of the last FSR, the main stock market indices have lost between 8% and 17% of their value, with the European ones below January 2020 levels (see Chart 1.5.1).

In the foreign exchange markets, the US dollar has appreciated against the main foreign currencies. These changes are attributable to actual and expected monetary policy tightening being greater in the US than elsewhere, the macroeconomic outlook for the United States deteriorating less and the search for safe-haven assets in the face of high uncertainty. The euro is at a 20-year low against the dollar, falling below parity (see Chart 1.5.2). The depreciation of the pound sterling intensified after the previous UK government announced its plan to cut taxes, resulting in the pound sterling falling to its lowest value against the dollar in almost 40 years, nearing parity. The Bank of England's intervention in the bond market, the scrapping of the tax cuts and the change in government have all led to a reversal of most of the pound sterling's depreciation. The Japanese yen is at its lowest level against the dollar since 1998, prompting the Japanese authorities to intervene in the market.

The sharp rise in the prices of some commodities has once again generated tensions in commodity derivatives markets. The escalation of gas and electricity

prices has translated into sharp increases in the amount of collateral required of certain counterparties in clearing houses where such commodity derivatives are settled. This situation has led certain energy utilities that use these contracts for hedging purposes to face difficulties in making these payments. To mitigate these problems and avoid disruptions in the functioning of these markets, several European countries have adopted public measures to support the liquidity of energy firms.[5] The recent drop in energy input prices has alleviated the situation, but we must wait to see whether this trend takes hold and this risk dissipates more definitively.

The downward path of financial asset prices observed in recent months could continue and steepen if certain risk scenarios materialise. Under a scenario in which inflation shows more persistence than expected, monetary policies could be tightened more than anticipated by the markets, triggering a further rise in financial market interest rates. This would have an adverse impact on the price of high credit-rated bonds and on risky assets through the increase in the discount rate implicit in these valuations. The price of these risk-bearing assets could also decline in a scenario of heightened uncertainty and lower economic growth through the adverse effect it would have on firms' expected future profits and/or through the increase in risk premia. These dynamics could be amplified if they were to trigger fire sales by some investors. An area of concern is the existence at the global level of some open-ended investment funds that have increased their exposure to risk in recent years and that have a small share of liquid assets to cover potential departures of participants.

1.2.2 Spanish real estate market

House purchases have continued to show notable strength, although some signs of slowing have been observed in the most recent period. On notarial information, between January and August 2022, housing transactions were slightly more than 30% above those recorded in the same period in 2019 and had reached the highest levels since 2007. These developments were driven by the still favourable financing conditions. However, transactions have waned in recent months (see Chart 1.6.1), in line with the worse economic outlook.

The number of building permits has declined, as has the production of inputs in the construction sector, largely owing to the sharp rise in energy costs, which has visibly pushed up the prices of materials and limited their availability. Thus, housing starts between January and August were just over 8% below those seen in the same period of 2019. There has also been some delay in housing completions, as illustrated by the gap between the number of building permits

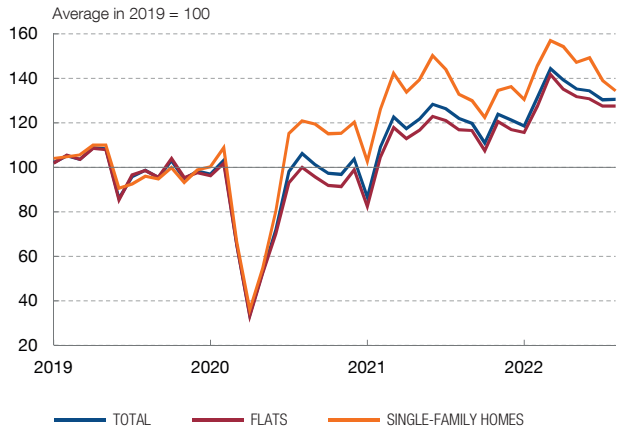
5 On 8 September HM Treasury and the Bank of England set up a £40 billion liquidity fund to support energy firms. The Swedish government announced on 4 September that it would provide electric utilities with up to $23 billion in credit guarantees, while Finland announced a similar package of €10 billion.

Chart 1.6

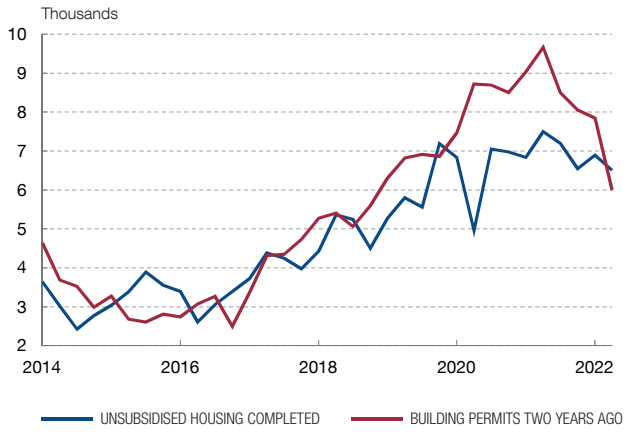
REAL ESTATE ACTIVITY AND PRICES REMAIN EXPANSIONARY, ALTHOUGH THERE ARE CERTAIN SIGNS OF A SLOWDOWN AGAINST A BACKDROP OF DETERIORATION IN THE ECONOMIC OUTLOOK AND GRADUALLY RISING FINANCING COSTS

The number of house purchases has moderated in recent months, but still showed notable growth in the first eight months of 2022 relative to the same period a year earlier. Housing starts and completions posted a shift downwards owing to the higher prices and shortage of materials, high energy costs and growing labour shortages. Against this backdrop, average house price growth moderated to 8% in Q2 which, however, is the second highest growth rate since 2007. There are also signs of diminished dynamism in the prices of some segments of the commercial real estate market.

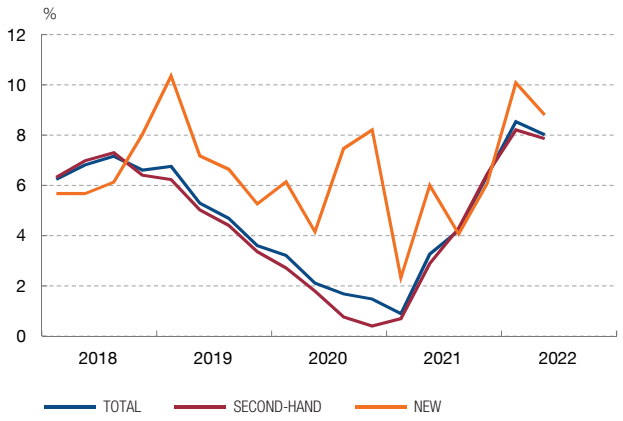
1 NOTARIAL HOUSE PURCHASES (a)



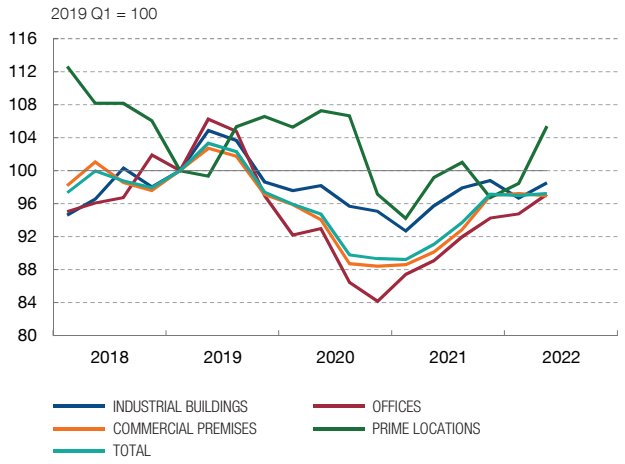
2 HOUSING STARTS (TWO YEARS AGO) AND COMPLETIONS (b)



3 HOUSE PRICES
Year-on-year change



4 COMMERCIAL REAL ESTATE MARKET PRICES (c)



SOURCES: Banco de España, Centro de Información Estadística del Notariado, Colegio de Registradores, INE and Ministerio de Transportes, Movilidad y Agenda Urbana.

a Seasonally and calendar adjusted series. Latest observation: August 2022.
b Seasonally and calendar adjusted series and quarterly average. Building permits granted two years ago are used to depict lagged housing starts. Latest observation: 2022 Q2.
c To calculate these indices each market is divided into strata containing homogeneous properties. A price is then estimated for each stratum based on a hedonic regression model. The indices aggregate the data on the prices estimated for each stratum. The index value for the commercial real estate market as a whole is calculated as an average weighted by the relative share of transactions carried out in each segment. The relative shares per segment are 4% for offices, 78% for commercial premises and 18% for industrial buildings. In 2022 properties in prime locations represent 4% of the transactions conducted in the commercial real estate segment as a whole. Prime location properties include any of the types of properties mentioned above (commercial premises, offices and industrial buildings) that are located in the central business districts of the main large cities (Barcelona, Bilbao, Madrid, Malaga, Palma and Valencia). The data for 2022 Q2 are provisional.

granted two years ago (two years being the average construction time) and the number of houses currently completed (see Chart 1.6.2). The pace of construction is also being affected by growing labour shortages in the sector, as noted by the Banco de España Business Activity Survey (EBAE, by its Spanish acronym).[6]

In line with developments in residential property purchases, new lending for house purchase grew at a brisk pace in 2022 H1, although there are also signs of a slowdown in recent months. In 2022 Q2 the volume of new mortgage loans increased by 10.9% year-on-year, a slightly slower rate of growth than that observed in the final stretch of 2021 (14.8% in 2021 Q4). Despite this notable buoyancy, the stock of mortgage credit hardly grew in 2022 Q2 (1.2%) compared with the same period a year earlier. This was similar to the growth seen in the previous quarters, since the repayment volume has continued to largely offset the amount of the new transactions.

The outstanding balance of credit to the development and construction sector continued to contract in the first half of 2022, in line with the scant momentum of new construction. Specifically, in 2022 Q2 the outstanding balance of this type of credit fell by 6.7% in year-on-year terms, standing at its lowest level for the last 20 years.

Demand for housing continues to outstrip supply and, accordingly, prices have continued to record high growth in Q2, although slightly lower than three months earlier. According to National Statistics Institute (INE) data, the year-on-year growth rate of housing prices moderated to 8% in Q2, 0.5 pp below the increase in Q1 (see Chart 1.6.3). Price rises moderated somewhat in nearly all regions, but were higher than the national average in the islands and along most of the Mediterranean coast. By segment, the price of both second-hand and, to a greater extent, new housing slowed (by 0.3 pp and 1.3 pp, to 7.9% and 8.8%, respectively). Slower growth has also been observed in flats and single-family homes, although the latter continue to record more buoyant growth.

The slowdown in house prices could intensify in the short and medium term. The uncertainty surrounding the economic outlook for agents, their income and the tightening of financial conditions will remain very important factors for the changes in demand for housing and house prices.

There are also signs of diminished dynamism in some segments of the commercial real estate market. In 2022 H1 prices stalled in the commercial premises segment (the one with the highest weight in the aggregate indices) and in that of industrial buildings, interrupting the path of growth observed in 2021 (see

6 See "Encuesta a las empresas españolas sobre la evolución de su actividad: tercer trimestre de 2022", Nota Económica, *Boletín Económico,* 3/2022, Banco de España.

Chart 1.6.4). Conversely, in the office segment and in prime location establishments[7] valuations continued to grow at a notable pace (9% and 6.3%, respectively, in year-on-year terms, in 2022 Q2).

1.3 Non-financial sectors

1.3.1 Non-financial corporations and households

According to Central Balance Sheet Data Office Quarterly Survey (CBQ) data,[8] firms' economic and financial situation continued to recover in 2022 H1, underpinned by the increase in turnover.[9] However, there are signs of deterioration in certain sectors most exposed to the rise in energy costs. Thus, 26.9% of firms posted a negative return on assets (ROA)[10] in 2022 H1, 2.9 pp less than in the same period a year earlier, but still 1.3 pp more than in 2019 H1.[11] By sector, the improvement was stronger in those most affected by the pandemic.[12] Thus, both the proportion of firms with losses and of those with high indebtedness[13] decreased (see Chart 1.7.1). There was also an improvement, albeit more moderate, in the sectors severely affected by the pandemic, which are also highly energy-intensive, such as transport. By contrast, some deterioration in firms' economic and financial situation is now being observed in the sectors most vulnerable to the rise in energy prices and which were not very affected by the pandemic (such as the chemical industry, the manufacture of plastics, the wood industry and the manufacture of basic metals).

Interest rate hikes are raising the degree of financial pressure borne by firms, especially in the case of those with greater indebtedness and with a higher proportion of liabilities whose cost is revised at short term. Until now only a small proportion of the increase in market interest rates has been passed through to the average cost of corporate bank debt, but this process can be expected to intensify in the coming months (see Box 1.2). It is estimated that market interest rate hikes of 300 bp, slightly more moderate than the increases in the 12-month EURIBOR rate recorded since the start of the year (325 bp), will raise indebted firms' median

7 The prime segment refers to any type of commercial premises located in the neighbourhoods with greater commercial activity in Madrid, Barcelona, Bilbao, Palma, Valencia and Malaga.

8 The CBQ comprises a sample of around 1,000 primarily large firms.

9 The State tax revenue service data also point to significant growth in the turnover in 2022 H1, which exceeded that reached in 2019 H1 across all sectors of activity, with the sole exception of the manufacture of transport equipment.

10 Return on assets = (Ordinary net profit + Financial costs) / Net assets (net of non-interest-bearing borrowing).

11 See A. Menéndez and M. Mulino (2022).

12 The sectors most affected by the COVID-19 pandemic are those whose turnover in 2020 was down more than 15% on 2019. These are: accommodation and food service activities, the manufacture of refined petroleum products, social, cultural and recreational services, transportation and storage, the manufacture of textiles and the manufacture of transport equipment.

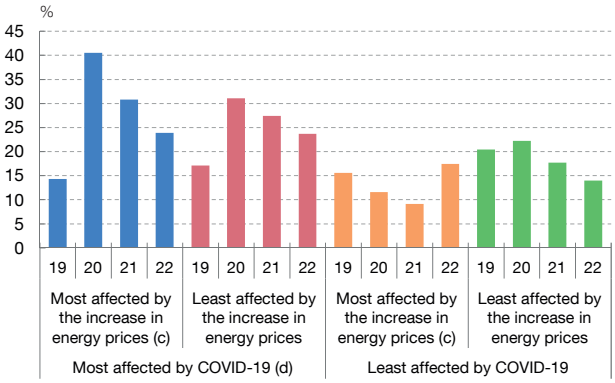
13 Firms are understood to be highly indebted when their ratio of Net financial debt to (Gross operating profit + Financial revenue) is higher than 10, or they have positive net financial debt and zero or negative earnings.

Chart 1.7

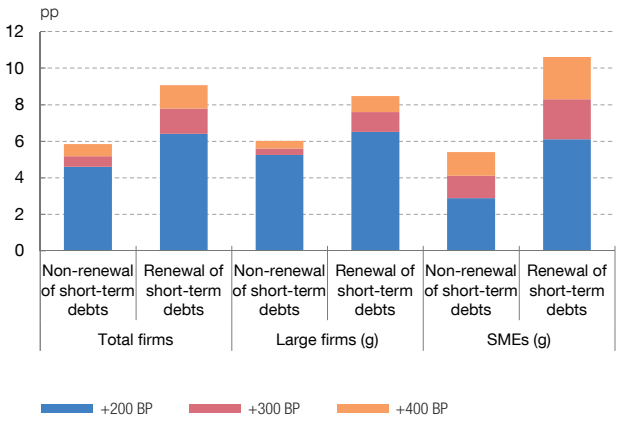
RISING ENERGY PRICES AND INTEREST RATES ARE NEGATIVELY IMPACTING FIRMS' FINANCIAL POSITION

Firms' income and financial position continued to recover during 2022 H1, particularly in the sectors most affected by the pandemic. However, the rise in energy costs is acting in the opposite direction, especially in the sectors most exposed to this shock and which have not benefited particularly from the end of the health restrictions. Also, once a 300 bp increase in the market interest rate is passed through to the cost of debts renewed in the short term, the weight of corporate debt of firms under high financial pressure will increase by up to 7.8 pp, while a 400 bp hike would have an impact of up to 9.1 pp.

1 PERCENTAGE OF VULNERABLE FIRMS BASED ON THE RATIO OF NET DEBT TO (GROSS OPERATING PROFIT + FINANCIAL REVENUE). H1 (a) (b)



2 ESTIMATED INCREASE IN THE WEIGHT OF DEBT OF FIRMS UNDER HIGH FINANCIAL PRESSURE OWING TO THE RISE IN INTEREST RATES (e) (f)



SOURCE: Banco de España.

a Information obtained from the CBQ sample. Data available to 2022 Q2.
b Firms are understood to be vulnerable when their ratio of Net financial debt to (Gross operating profit + Financial revenue) is higher than 10, or they have positive net financial debt and zero or negative earnings.
c The sectors most affected by the increase in energy prices include transportation, mining, basic metals, chemical products and non-metallic mineral products, plastic and fishing.
d The sectors most affected by the COVID-19 pandemic are those whose turnover fell by more than 15% in 2020.
e Firms are considered to be under high financial pressure when their ratio of (Gross operating profit + Financial revenue) to Financial costs is below one.
f In the case of non-renewal of short-term debts, the rise in interest rates is fully fed through to the interest rate on long-term and variable-rate debts and loans. A pass-through of 15% is assumed for sight deposits and of 76% for time deposits for up to one year. The renewal of short-term debts differs from the previous case in that the rise in interest rates is also passed-through to short-term debts and loans.
g Size is defined according to European Commission Recommendation 2003/361/EC.

debt burden ratio by between 2.6 pp and 5.6 pp.[14] Under this scenario, the proportion of total corporate debt of firms under high financial pressure,[15] which stood at 14.1% before this shock, will increase by between 5.2 pp and 7.8 pp (see Chart 1.7.2). No substantial differences in these impacts have been observed by firm size.

The sharp economic slowdown anticipated for the coming quarters could also negatively impact firms' economic and financial position, especially if the

14 The values within this range are obtained based on different assumptions regarding the percentage of debt which matures at short term and is refinanced. The 5.6 pp impact on the upper range assumes the full renewal of the debts maturing in the short term. See Box 3, "An approach to the possible impact of the rise in interest rates on firms' financial position", "Quarterly report on the Spanish economy", *Economic Bulletin* 3/2022, Banco de España.

15 A firm is considered to be under high financial pressure when the ratio (Gross operating profit + Financial revenue) to Financial costs is below one.

aforementioned risk scenarios regarding economic growth materialise. This could further impair their ability to repay their debts. The firms most exposed to this risk are those whose activity is more cyclical, those with a greater share of fixed costs and those starting out from a weaker financial position.

In the case of households and, particularly, lower-income ones, high inflation is raising the level of financial pressure borne. As a result of positive developments in employment in recent quarters, gross disposable income, in nominal terms, has continued to grow, standing in Q2 3.2% above pre-health crisis levels. However, the sharp rise in consumer prices is eroding (especially low-income) households' purchasing power. It is estimated that the average inflation accumulated in 2021 and 2022 will lead to an average increase in indebted households' spending on non-durable goods of 3.9% of their income, the impact being close to 10% in the quintile of lower-income households (see Chart 1.8.1). The evidence available suggests that households that have a more comfortable liquidity buffer[16] are absorbing the impact of inflation by saving less, without changing their spending on other items. Conversely, households with less liquidity (mainly low-income ones) appear to be offsetting the rise in prices by decreasing their spending on non-energy goods.[17]

Compounding this would be the effect associated with the increase in indebted households' financial burden, resulting from higher financing costs. Up to now, the pass-through of market interest rate rises to the average cost of their debt has been modest (see Box 1.2). This pass-through is expected to intensify in the coming quarters, affecting households' ability to repay debts to a greater extent. It is estimated that a 300 bp increase in the 12-month EURIBOR would lead to a rise in indebted households' net financial costs by an amount equivalent to 2.3% of their income, once the conditions of outstanding variable-rate loans are updated (see Chart 1.8.1). This same shock would raise by 3.9 pp the percentage of households with a high net financial burden,[18] to 13.8% (see Chart 1.8.2). All of these effects will tend to be more intense among lower-income indebted households. It should be noted that the 12-month EURIBOR has risen by close to 325 bp in 2022. Therefore, the effect this will have on households' interest burden will be somewhat larger than the aforementioned impacts.

In addition, if some of the economic outlook risk scenarios mentioned above materialise, real household income could decline through an increase in unemployment or a greater persistence of inflation, aggravating households' economic situation. Thus, regardless of their level of income, since March 2022 most

16 Households that have a more comfortable liquidity buffer are those that have sufficient liquidity (or are able to obtain it) to cover unexpected expenses equal to one month of household income. See the ECB's Consumer Expectations Survey.

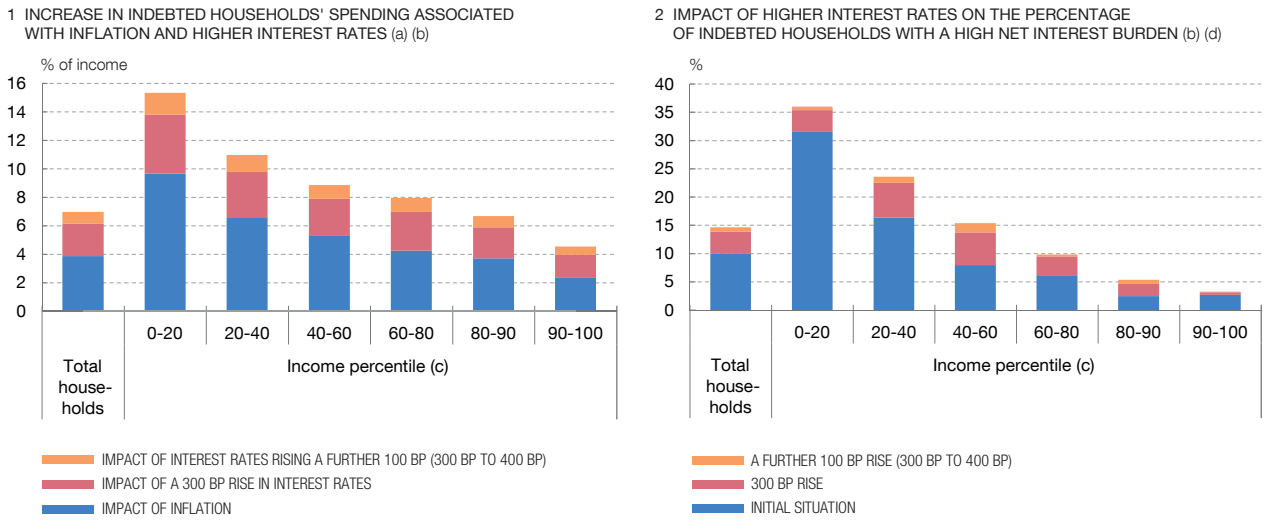
17 See C. Martínez-Carrascal (2022).

18 The net interest burden is considered to be high when the ratio of (Debt service expenses - Interest income from deposits) to Household income is over 40%.

Chart 1.8

INFLATION AND HIGHER INTEREST RATES DETERIORATE TO A GREATER EXTENT THE FINANCIAL POSITION OF LOW-INCOME INDEBTED HOUSEHOLDS

Cumulative average inflation for 2021 and 2022 has increased, on average, indebted households' spending on non-durable consumer goods by an amount equal to just under 4% of their income. A 300 bp increase in market interest rates would increase, on average, the net interest burden by 2.3% of their income. This increase in interest rates would raise the proportion of households with a high net interest burden by almost 4 pp. All these effects would tend to be greater for the lower-income segments.



SOURCES: Banco de España and Survey of Household Finances (2017).

a The impact of inflation is obtained by multiplying the consumption of non-durable goods by cumulative inflation in 2021 and 2022, calculated as the average of the harmonised index of consumer prices in 2021 (actual figure) and 2022 (forecast in the Banco de España October 2022 macroeconomic projections).
b The impact of the interest rate increases reflects the change in net interest burden (Debt servicing costs - Interest income from deposits). Interest rate increases are assumed to be fully passed through to variable borrowing costs.
c The percentiles are defined for the entire sample of households, regardless of whether or not they are indebted.
d The net interest burden is considered to be high when it exceeds 40% of household income.

households have been expecting their financial position to worsen over the coming twelve months, according to the European Commission's monthly consumer survey.[19] This trend is more pronounced in the bottom income quartile, whose indicator stood at October 2022 at deterioration levels higher than those recorded at the onset of the pandemic, while for the top income quartile this indicator is far from the level observed at that time.[20]

1.3.2 General government in Spain

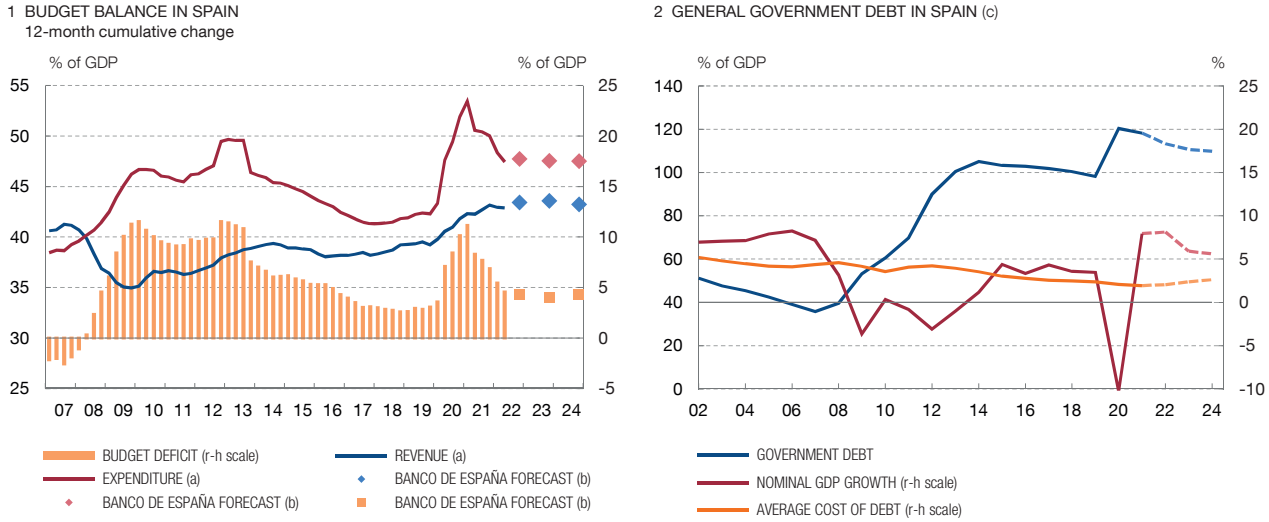
The general government deficit has continued to decline in recent months, driven by the strong growth in receipts (see Chart 1.9.1). The latest available

19 The European Commission's monthly consumer survey is available here.
20 The ECB's Consumer Expectations Survey suggests a similar trend. See C. Martínez-Carrascal (2022).

Chart 1.9

THE SPANISH BUDGET DEFICIT CONTINUED TO FALL, ALTHOUGH IN THE ABSENCE OF NEW MEASURES, SPANISH PUBLIC FINANCES WILL REMAIN VULNERABLE IN THE MEDIUM TERM

The budget deficit decreased by 2.3 pp in 2022 H1, to 4.6% of GDP. However, in the absence of new measures, further improvements in the deficit and public debt will tend to tail off, rendering the Spanish economy vulnerable in the medium term to possible future crises and increases in the cost of debt.



SOURCES: IGAE and Banco de España.

a Excluding estimated NGEU funds, which temporarily increase revenue and expenditure, but have no effect on the deficit.
b Taken from the Banco de España's macroeconomic projections published on 5 October 2022.
c The broken lines denote the Banco de España macroeconomic projections for 2022-2024.

information for general government as a whole, which relates to June, shows a general government deficit of 4.6%, down 2.3 pp (in cumulative 12-month terms and as a percentage of GDP) on the figure at end-2021. Receipts performed notably in the first half of the year, continuing to grow at very high rates (above 10% year-on-year). This was bolstered by the recovery in activity and by the impact of the growth of the nominal variables (prices and wages). Nonetheless, the tax take in recent months was again unexpectedly high relative to its macroeconomic determinants, albeit to a lesser extent than in the two previous years. From the start of the COVID-19 crisis in 2020 and excluding the transitory negative impact of the tax cut measures adopted in response to the energy crisis, receipts as a percentage of GDP grew slightly more than 4 pp (see Chart 1.9.1).[21] Expenditure hardly grew in 2022 H1 relative to the same period a year earlier, with the new measures deriving from the war in Ukraine being offset by the absence of certain extraordinary expenses incurred in 2021.[22]

21 Of which only 0.2 pp relate to measures to raise taxes.

22 Such as the extraordinary furlough scheme and suspension of self-employment benefits linked to COVID-19 and the €4.2 billion of estimated losses arising from guarantees granted during the pandemic and allocated in 2021 H1.

In the future other consolidation measures (increase in receipts and/or spending cuts) will be necessary to continue reducing the deficit. The Banco de España's latest projections, published on 5 October,[23] which only incorporate the measures approved until then, point to a deficit of around 4.3% of GDP at end-2022, below the reference value of 5% set by the Government. This is a moderation of the rate of decline in the budget deficit relative to recent months that will remain over the following years, with the budget deficit holding at 4.3% in 2024 (see Chart 1.9.1).[24] Further reductions would require new measures on the receipts or expenditure side, and would benefit from structural reforms enhancing the potential growth of the economy.

In terms of the public debt-to-GDP ratio, nominal GDP growth is expected to offset the general government primary deficit and the changes in the cost of debt up to 2024 (see Chart 1.9.2). Thus, according to the Banco de España's latest projections, the Spanish public debt-to-GDP ratio would decline from the 118.4% recorded in 2021 to a projected 109.9% for 2024. Among the determinants of the changes in said ratio, the general government primary deficit would contribute to an increase of 5 pp. However, this would be more than offset by nominal GDP growth rates remaining relatively high during those years – clearly above the cost of debt – triggering a decline in the public debt-to-GDP ratio.

However, the absence of consolidation measures makes the Spanish public finances vulnerable to possible short or longer-term crises or increases in the cost of debt. The persistence of a structural deficit will continue to exert upward pressure on the level of government indebtedness. This will tend to be exacerbated in the medium and long term owing to increasing social demands related to population ageing and climate change challenges. Also, the positive differential between nominal GDP growth and the cost of debt is expected to narrow, moving towards values close to its historical average. The aforementioned monetary policy tightening and its pass-through to market financial conditions increase the probability of a more unfavourable development in this differential, also in the near term. All of these conjunctural and structural factors will tend to raise the level of public debt and, therefore, reduce the room for manoeuvre with which to address future crises.

The lengthy average term to maturity of public debt and the economic policy instruments available to the European institutions provide some temporary headroom to address the challenges posed by the consolidation of public finances in Spain at the most appropriate time. The Banco de España's latest forecasts already envisage a considerable rise in the interest rates traded on Spanish

23 See Box 1, "Macroeconomic projections for the Spanish economy (2022-2024)", "Quarterly report on the Spanish economy", *Economic Bulletin* 3/2022, Banco de España.

24 The measures announced together with the Draft State Budget for 2023 do not substantially alter these projections.

debt markets.[25] However, since just over 20% of the debt matures in the next two years and part of it bears interest rates exceeding the current ones, this only translates into an estimated increase of 0.7 pp in the average cost of Spanish public debt between 2021 and 2024.[26] The measures adopted by the European authorities (and, in particular, by the Eurosystem)[27] will also contribute to avoiding situations of disorderly increases in the yields required of Spanish general government by the financial markets.

In the current setting of high inflation and public indebtedness, fiscal policy measures should be targeted and temporary. They should focus on lower-income households, which bear the brunt of inflation, and on the firms most vulnerable to this shock. Moreover, the measures should be temporary to avoid a further increase in the structural budget deficit.

In parallel, a fiscal consolidation process needs to be launched that will help progressively reduce the current fiscal imbalances and gain fiscal space to respond to future shocks. In this regard, it should be borne in mind that the roll-out of investment projects under the NGEU programme already represents an appreciable fiscal stimulus (even if their implementation is experiencing some delays). Thus, the combination of the large-scale use of the European funds – which does not directly affect the budget deficit but does have a positive impact on economic activity – and the commencement of a fiscal consolidation process would make it possible to continue providing some support to economic activity (which may be necessary in a setting in which pre-pandemic GDP levels have not yet been recovered), while gradually reducing the current high structural budget deficit of public finances in Spain.

In any event, it should be noted that offsetting the adverse effects of the current supply-side shock also calls for ambitious policies to boost productivity growth and potential GDP. The role of the NGEU funds could also be particularly important to accompany and finance the necessary structural reforms.

1.3.3 Financial flows vis-à-vis the rest of the world and the international investment position

In 2022 H1 capital inflows to Spain were high (€92 billion), exceeding the net purchases of foreign assets by residents (€80 billion). The main net purchases

25 In the case of the Spanish 10-year bond yield, from 0.3%, recorded on average in 2021, to 3.6%, projected for 2024.

26 An increase of 100 bp in the expected future path of short, medium and long-term interest rates would raise the increase in the average cost of debt in 2024 by a further 0.4 pp, putting the general government's financial burden at 3.1% of GDP at the end of the projection horizon.

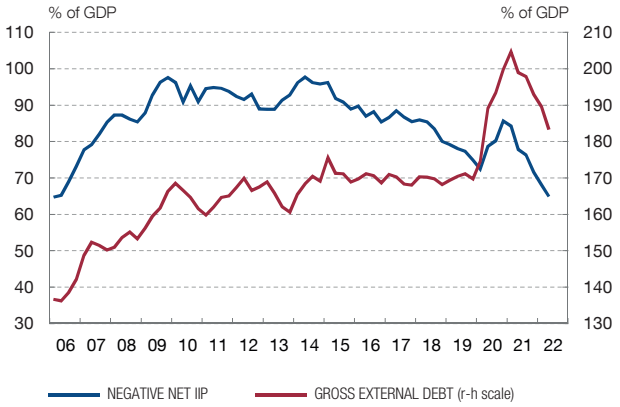
27 Including most notably the PEPP portfolio's flexible reinvestment and the new Transmission Protection Instrument (TPI).

Chart 1.10

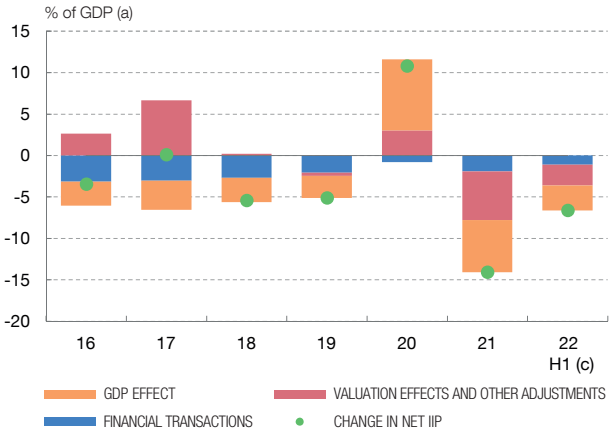
SPAIN'S NEGATIVE NET IIP AND GROSS EXTERNAL DEBT AS A PERCENTAGE OF GDP HAVE CONTINUED TO CORRECT IN 2022 H1

Spain's negative net IIP continued improving in 2022 H1, reaching 64.9% of GDP, its lowest level since 2006 Q1, as a result of the positive contribution of all its components. Spain's gross external debt decreased slightly in the first half of the year, which, combined with the economic growth, resulted in gross external debt as a percentage of GDP decreasing. However, it remains 13.5 pp higher than the pre-pandemic level.

1 NEGATIVE NET IIP AND GROSS EXTERNAL DEBT (a) (b)



2 DETERMINANTS OF THE CHANGE IN NEGATIVE NET IIP (a)



SOURCE: Banco de España.

a Net IIP is the difference between the value of resident sectors' foreign assets and that of the liabilities to the rest of the world.
b External debt comprises all liabilities that entail a future payment obligation for principal, interest or both (i.e. all financial instruments, except for equities, financial derivatives and monetary gold ingots).
c Calculated as a percentage of cumulative four-quarter GDP.

by international investors were short-term deposits (€68.1 billion), followed by long-term general government debt securities (€28.1 billion) – although those at short term were divested (€17.6 billion) – and direct investment in shares (€11.9 billion).

Spain's negative net international investment position (IIP) continued to correct to 64.9% of GDP in June, the lowest level since 2006 Q1 (see Chart 1.10.1). This ratio is 6.6 pp lower than in December 2021, of which 3 pp are explained by the growth in GDP. Despite its decline, this level is still high from a historical standpoint and far exceeds the European Commission's macroeconomic imbalance alert threshold.[28] In terms of volume, the negative net IIP decreased thanks to the flow of financial transactions with the rest of the world being positive and, especially, to valuation effects and other adjustments (see Chart 1.10.2). The decline in financial asset prices in the international markets penalised the value of residents' holdings abroad, although the depreciation of the euro mitigated this effect to some extent. The decrease in the value of liabilities is mainly explained by the increase in long-

28 The Macroeconomic Imbalances Procedure set up by the European Commission monitors 14 indicators which signal an alert when certain thresholds are exceeded. In the case of the negative net IIP, this threshold is set at 35% of GDP.

term interest rates which reduced the value of (particularly general government) debt securities.

Spain's gross external debt also continued to decline in terms of GDP, although it still stands above pre-pandemic levels. Spain's gross external debt fell by 9.7 pp of GDP in the first half of the year, to 183.3%. The vulnerability which this high external debt entails is mitigated by the composition of liabilities, as a very large share is not repayable at short term, public sector debt predominates and it is mainly denominated in euro and at a fixed rate. However, the increase in market financing costs exacerbates this vulnerability.

Box 1.1

GLOBAL GEOPOLITICAL TENSIONS: CHANNELS OF IMPACT ON THE EUROPEAN UNION

Geopolitical factors have played a central role in driving activity and economic relations in recent months. The Russian invasion of Ukraine has cast a shadow over the geopolitical landscape and heightened global uncertainty (see Charts 1 and 2), with severe economic consequences. That said, geopolitical factors have become increasingly important in economic developments over the past decade, with recent examples including the US-China trade war in 2018-2019 and Brexit.

The existing empirical evidence shows that rising geopolitical risks have historically been accompanied by higher uncertainty. This eventually feeds through to financial asset prices, making them more volatile, and also reduces investment and employment, with a potential negative impact on GDP.[1] The academic literature also underlines how trade and financial links are the main channels of transmission of higher uncertainty across countries and geographical areas.[2] Against this backdrop, the EU's high degree of trade and financial openness, which has long been one of the main reasons for its prosperity, could now become a factor of vulnerability.[3]

One of the sources of Europe's vulnerability to the rise in geopolitical tensions is the high external dependency with respect to some products that are key to the EU economy but which are imported from a small number of non-EU countries. In particular, the EU's goods imports are highly concentrated in China (see Chart 3),[4] which is also the main exporter of some electronic goods (such as computers, optical devices and photovoltaic cells), for which the EU has a relatively low internal production capacity. This reliance on Chinese imports can have significant consequences for the European manufacturing sector. For instance, recent empirical evidence[5] shows that the pandemic-related interruptions in the supply chain from China in the early months of 2020 had a considerable impact on euro area manufacturing output, reducing it temporarily by 7%.

The EU is also highly dependent on some raw materials that are crucial to the energy and digital transitions. The European Commission has a list of 30 raw materials deemed to be "critical" owing to their considerable economic importance, the difficulty in replacing them with other materials, the high import concentration and other supply-related risks.[6] Russia is the EU's main supplier of these raw materials (accounting for 18% of the total value of such imports in 2019), ahead of the United Kingdom, the United States, South Africa, Brazil and China (see Chart 4). The European Commission estimates that demand for some of these critical raw materials will rise fivefold by 2030, thereby drastically increasing the EU's external dependency in this area.

The EU's trade dependency with respect to energy products, in particular gas, is an example of the consequences of a very concentrated supply of a key commodity. Before the invasion of Ukraine, natural gas imports from Russia and, to a lesser extent, Norway played a central role in Europe's value chain. The surge in gas prices (which, as shown in Chart 5, has been much sharper in the EU than in the United States), the drastic reduction in supply from Russia and the difficulties in replacing gas with other energy sources have exerted strong pressure on inflation and become one of the main risks for the European economy in the short and medium term. The estimated impact of the natural gas price

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1 See D. Caldara and M. Iacoviello (2022), "Measuring Geopolitical Risk", *American Economic Review,* vol. 112 (4), pp. 1194-1225; S. R. Baker, N. Bloom and S. J. Davis (2016), "Measuring Economic Policy Uncertainty", *The Quarterly Journal of Economics,* 131(4), 1593-1636; and M. Diakonova, L. Molina, H. Mueller, J. J. Pérez and C. Rauh, "The information content of conflict, social unrest and policy uncertainty measures for macroeconomic forecasting", *Working Paper* No 2232, Banco de España.

2 See C. Ghirelli, J. J. Pérez and A. Urtasun (2021), "The spillover effects of economic policy uncertainty in Latin America on the Spanish economy", *Latin American Journal of Central Banking,* vol. 2 (2).

3 In addition, a fragmentation of international trade along geostrategic lines could lead to a marked decline in trade flows between different blocs of countries and a consequent erosion of trade-related welfare gains. See R. Campos, J. Estefania-Flores, D. Furceri and J. Timini (2022), "Trade fragmentation", *Documento de Trabajo,* Banco de España, forthcoming.

4 The import concentration of a product is measured using a Herfindahl-Hirschman index, which is obtained as the sum of the squared shares of each exporter country in EU imports. An indication of the internal productive capacity and replacement capacity for a product is obtained through two metrics: (1) the share of intra-EU imports in the total value of EU imports of that product, and (2) the ratio of imports from outside the EU to total EU exports of that product.

5 M. Khalil and M.-D. Weber (2021), "Chinese supply chain shocks", *MPRA Paper* No 110356.

6 European Commission (2020), "Critical Raw Materials Resilience: Charting a Path towards greater Security and Sustainability", COM (2020) 474. "Critical" raw materials include, for example, rare earth, palladium, cobalt, lithium and magnesium.

Box 1.1

GLOBAL GEOPOLITICAL TENSIONS: CHANNELS OF IMPACT ON THE EUROPEAN UNION (cont'd)

Chart 1
GEOPOLITICAL RISK INDEX (a)

Chart 2
WORLD UNCERTAINTY INDEX (WUI) (b)

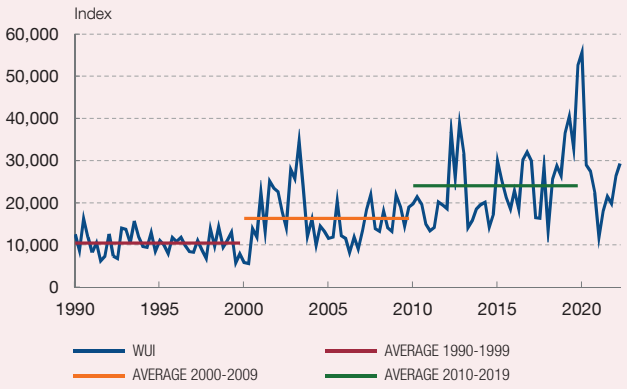


Chart 3
BILATERAL IMPORT CONCENTRATION INDEX FOR THE EUROPEAN UNION (c)

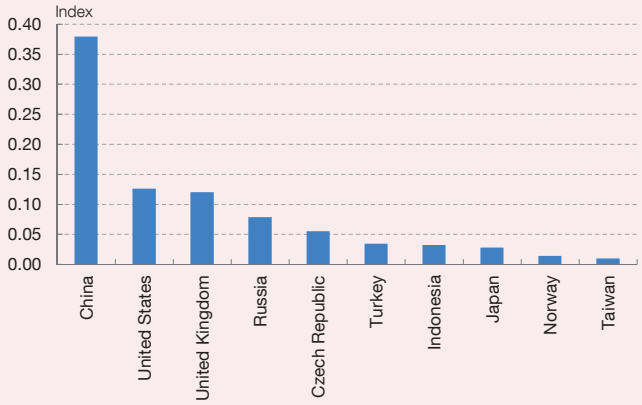
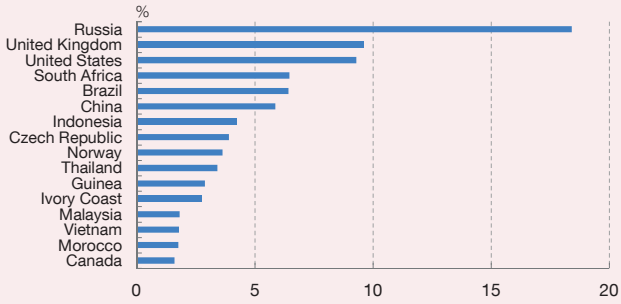


Chart 4
MAIN EXPORTERS OF CRITICAL RAW MATERIALS TO THE EUROPEAN UNION (d)



SOURCES: Ahir et al. (2021), Caldara and Iacoviello (2022) and Banco de España calculations, drawing on product-level data in the CEPII's BACI database (2019 data).

a The geopolitical risk index uses text analysis on English-language newspaper articles, counting mentions associated with geopolitical risks, such as "war", "invasion", "military threat", "military escalation" and "terrorist act" (see D. Caldara and M. Iacoviello (2022), "Measuring Geopolitical Risk", *American Economic Review,* vol. 112 (4), pp. 1194-1225.
b The world uncertainty index is calculated by counting the percent of the word "uncertain" or its variant in the Economist Intelligence Unit country reports (see H. Ahir, N. Bloom and D. Furceri (2022), "The World Uncertainty Index", *NBER Working Paper* 29763).
c The bilateral import concentration is measured by weighting the total value of imports from outside the EU of each group of Harmonised System level 6 (HS-6) products, for which the partner country is the main exporter to the EU, by the respective import concentration index.
d Share in the total value of EU imports of critical raw materials, by country of origin.

increases on euro area inflation suggests the effects will be significant and persistent (see Chart 6),[7] especially the indirect effects stemming from the higher costs of goods that are produced using gas or whose price is closely linked to natural gas prices (for example, electricity).

Geopolitical risks also have a bearing on the EU's foreign direct investment exposures. In all categories of financial flows (direct investment, portfolio investment and bank flows), the EU's main partners are other advanced economies (specifically, the United States, the United

7 L. López, S. Párraga and D. Santabárbara (2022), "The pass-through of higher natural gas prices to inflation in the euro area and in Spain", *Economic Bulletin* 3/2022, Banco de España.

Chart 5
NATURAL GAS PRICES (a)

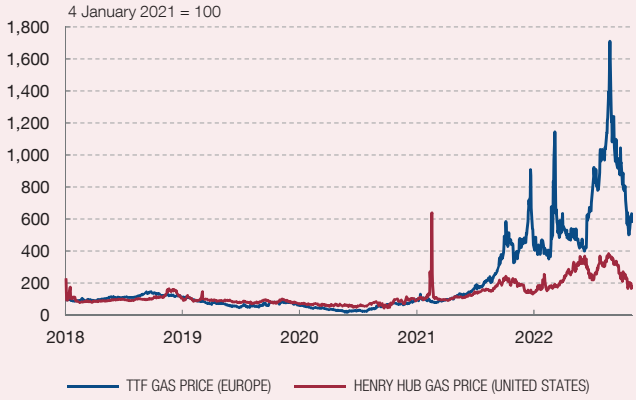


Chart 6
EFFECT ON EURO AREA HICP INFLATION OF A PERMANENT 10% INCREASE IN NATURAL GAS PRICES (b)

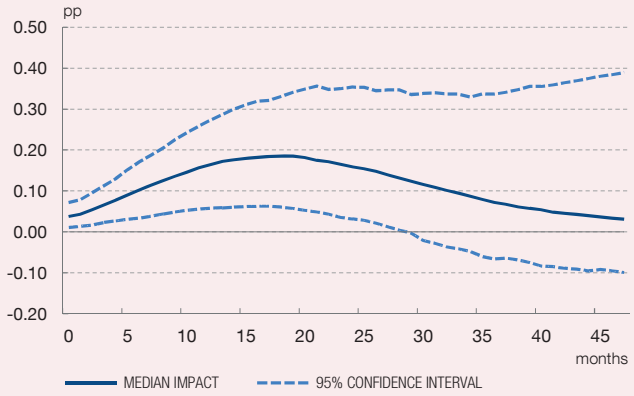


Chart 7
FOREIGN DIRECT INVESTMENT IN THE EURO AREA (c)

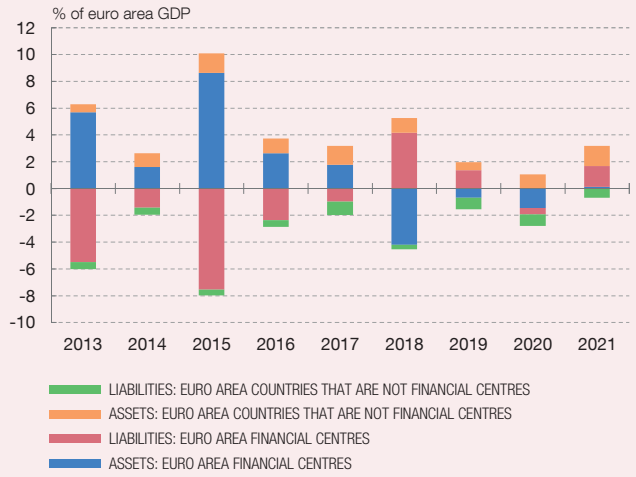
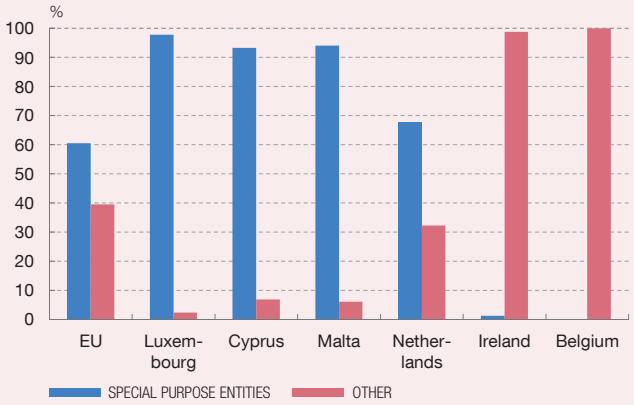


Chart 8
FOREIGN DIRECT INVESTMENT THROUGH SPEs IN THE EUROPEAN UNION. AVERAGE 2015-2020 (d)



SOURCES: BP Statistical Review of World Energy, Eikon, Eurostat and Banco de España calculations.

a Spot prices in both markets are expressed in euro for comparison.
b Impulse-response functions to a permanent 10% increase in natural gas prices, estimated through a Bayesian Vector Autoregression (BVAR) model that includes year-on-year changes in the harmonised index of consumer prices (HICP) (headline HICP, the electricity component and the gas-derived products component), in natural gas prices in Europe and in oil prices (all expressed in euro).
c Net change in flows of foreign direct investment assets and liabilities from/to the EU. The liability flows are shown with a negative sign for visualisation purposes. Negative (positive) flows of assets (liabilities) denote divestments and repatriation of profits. The financial centres in the euro area are Belgium, Cyprus, Ireland, Luxembourg, Malta and the Netherlands.
d The blue vertical bars denote the percentages of foreign direct investment stocks in the EU intermediated by special purpose entities (SPEs), and the pink vertical bars show those not intermediated by SPEs in 2015-2020. Such entities are created in countries with legal frameworks that are favourable from a tax perspective, for transferring the risk off the parent's balance sheet or for confidentiality reasons. They typically form part of sophisticated chains of firms covering several countries.

Kingdom and Switzerland), with emerging countries still representing a very small part of such exposures.[8] However, some aspects make it difficult to identify the ultimate investors in the EU. To begin with, around one-quarter of foreign direct investment in the EU comes from offshore centres. Further, most direct investment flows to

8 In 2015-2020, the United States, the United Kingdom and Switzerland together represented 60% of the EU's foreign direct investment assets and liabilities, with the other advanced countries accounting for a further 10%. China (including Hong Kong) represented around 3% in the same period.

and from the EU are intermediated through six investment hubs (Belgium, Cyprus, Ireland, Luxembourg, Malta and the Netherlands) (see Chart 7), with nearly 60% of direct investment inflows being channelled through special purpose entities (SPEs),[9] which are used mainly for tax or confidentiality reasons (see Chart 8). The empirical analyses[10] that have sought to shed light on these exposures estimate that direct investment flows (not through SPEs) from the United States into the EU may be nearly twice as high as those observed directly, while those from China could be nearly three times so.[11]

In sum, the EU economy is exposed to significant channels of transmission of the negative economic effects of geopolitical tensions. This could contribute to temporary adverse deviations from the current baseline scenarios and even to a shock to the EU's potential growth in the long term. The EU's reliance on energy commodity imports from non-EU countries, in particular from Russia, poses the greatest risks in the short term. However, its dependency on Chinese manufacturing and global financial interconnections are also potential sources of risks over longer time horizons. The energy and digital transformation presents opportunities for mitigating these risks, yet the potential gains – in terms of incorporating new technologies and reshaping trade flows – will only unfold gradually over time. Meanwhile, such risks need to be quantified as accurately as possible and properly incorporated into economic policy and business planning, particularly in the financial sector.

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9 Such entities are created in countries with legal frameworks that are favourable from a tax perspective, for transferring the risk off the parent's balance sheet or for confidentiality reasons. They typically form part of sophisticated chains of firms covering several countries.

10 C. Alcidi, D. Postica and F. Shamsfakhr (2021), "Study on the Analysis of Developments in EU Capital Flows in the Global Context", *External Contribution,* Centre for European Policy Studies.

11 Thus, C. Alcidi, D. Postica and F. Shamsfakhr (2021) estimate direct flows from the United States (not through SPEs) in 2019 at €1.8 trillion (as compared with the €1.1 trillion observed) and those from China at €116 billion (as compared with the €40.5 billion observed).

Box 1.2

THE PASS-THROUGH OF MARKET INTEREST RATES TO THE COST OF BANK LOANS TO HOUSEHOLDS AND FIRMS

Since the beginning of 2022, interest rates have increased sharply on the financial markets, affecting interbank market rates such as 3-month and 12-month EURIBOR, which are the main benchmarks for floating-rate loans. This reflects the monetary policy normalisation process and market expectations of further policy rate hikes over the coming months.

These developments have an impact on the financial costs of households and firms through two channels: i) the increase in the cost of new lending and ii) the rise in the cost of outstanding debt for borrowers. Historically, changes in benchmark interest rates have passed through to the cost of debt for these agents more or less fully, although usually with some lag. In the case of new lending, this lag is due to commercial and statistical reasons.[1] As regards outstanding debt, it is explained by the fact that a portion of the stock of loans is not subject to interest rate revision until maturity of the related loan and that, for the portion that is subject to revision, lending conditions are not adjusted immediately, but periodically (for the most part, yearly).

This box analyses the extent to which the market rate increases observed in recent months are being passed through to the cost of bank loans to households and firms at the same pace as in other historical periods. A previous article[2] assessed this issue for the cost of new bank loans with data until May 2022. This analysis is now extended with data up to September 2022, to ascertain whether the same findings still stand. Furthermore, the box also analyses the speed at which interest rate rises are being passed through to the average rates on outstanding debt, which are more relevant both for determining financial institutions' interest margin and for assessing households' and firms' debt repayment capacity. The two exercises are conducted for loans for house purchase and loans to non-financial corporations (NFCs), which are the segments concentrating the highest volume of lending. Such loans also account for a higher share in these sectors' liabilities.

Regarding the pass-through to new lending, Charts 1 to 4 show, for different credit segments, the cumulative change in the cost of bank loans and their benchmark market interest rates between December 2021 and September 2022. Also shown, for comparison purposes, are the changes observed in these variables over a similar period of time in other historical bouts of interest rate hikes (starting in September 2005 for the short and medium-term benchmarks and in September 2010 for longer-term benchmarks).[3]

As shown in Chart 1, in the segment of loans for house purchase, between December 2021 and September 2022 average short-term interest rates[4] on new loans (floating-rate loans) only reflected 34% of the rise in 12-month EURIBOR, which is their main benchmark. This proportion is far lower than that observed (77%) in the first nine months following the start of the interest rate hike episode of 2005. As shown in Chart 2, in the case of long-term interest rates for this segment (mainly fixed-rate loans), the pass-through in the same period was even lower (30%) vis-à-vis the changes in the benchmark rate (20-year interest rate swap, IRS), which contrasts with the more than full (over 100%) pass-through observed in the 2010 rate hike cycle.

In the segment of loans to NFCs,[5] the pass-through of market interest rates to the interest rates on new bank loans is also generally being substantially slower than in other historical bouts of interest rate hikes (see Charts 3 and 4).

The slower pass-through to the interest rates on new loans in the current cycle, which is in line with previous analyses, could be due to the fact that, in contrast to the developments observed in 2005, the remuneration of customer deposits has hardly increased in response to

1 The commercial reasons would be related to the financial institutions' reluctance to change terms and conditions on loans frequently. With regard to statistical reasons, lending transactions included by financial institutions in the interest rate statistics for a given month may refer to transactions initiated in previous months.

2 For further details, see Box 1 of Analytical Article "Recent developments in financing and bank lending to the non-financial private sector. First half of 2022", *Economic Bulletin* 3/2022, Banco de España.

3 To choose the cycle of interest rate hikes in the historical period, a significant cumulative rise in the benchmark interest rate must have been recorded. In addition, the historical upward cycle must have lasted at least nine months for the short and medium-term benchmarks and, owing to the absence of longer continuous cycles with significant hikes since 2003, seven months for the long-term benchmarks.

4 In this box, the term of interest rates on new loans refers to the period in which the interest rates are fixed, rather than to the loan term.

5 Between January and September 2022, 85% of the volume of new lending to NFCs comprised loans in which the interest rate was fixed for a period of less than one year, with around one-half of such loans being for an amount of less than €1 million.

Chart 1
CUMULATIVE CHANGE IN THE COST OF SHORT-TERM LOANS FOR HOUSE PURCHASE AND IN THE MARKET INTEREST RATE (a) (b)

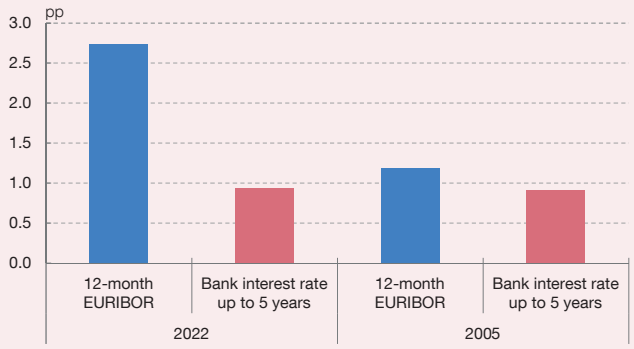


Chart 2
CUMULATIVE CHANGE IN THE COST OF LONG-TERM LOANS FOR HOUSE PURCHASE AND IN THE MARKET INTEREST RATE (a) (c)

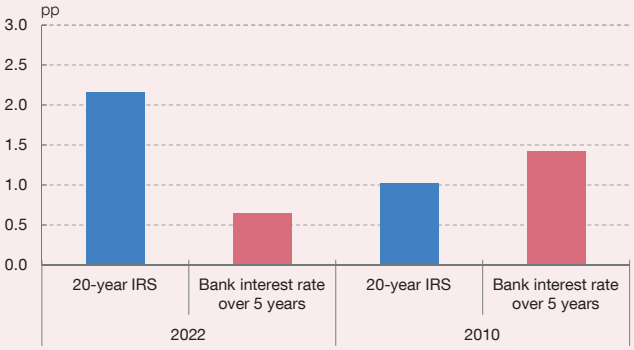


Chart 3
CUMULATIVE CHANGE IN THE COST OF SHORT-TERM LOANS TO NFCs AND IN THE MARKET INTEREST RATE (a) (b)

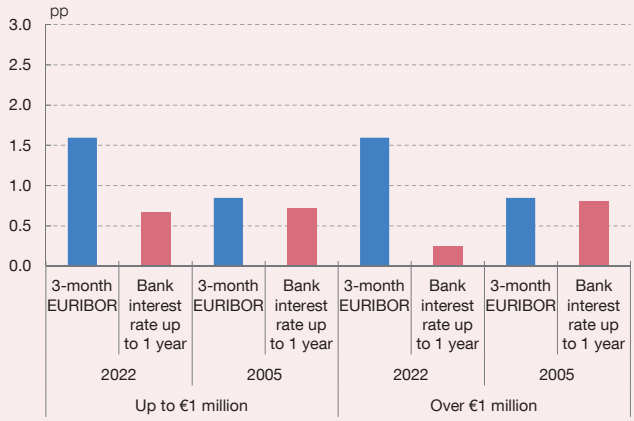
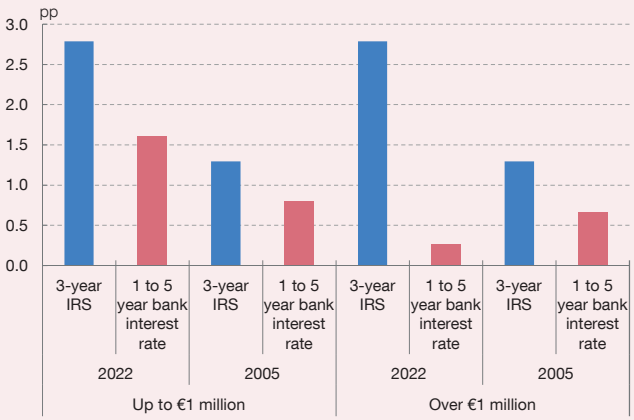


Chart 4
CUMULATIVE CHANGE IN THE COST OF MEDIUM-TERM LOANS TO NFCs AND IN THE MARKET INTEREST RATE (a) (b)



SOURCES: Banco de España and Refinitiv Datastream.

a Bank lending interest rates are narrowly defined effective rates (NDERs), i.e. they exclude related charges, such as repayment insurance premia and fees. They are also trend-cycle interest rates, i.e. they are adjusted for seasonal and irregular components (small changes in the series with no recognisable pattern in terms of periodicity or trend). Also, the bank rate term does not necessarily indicate the maturity of the lending transaction, but rather the frequency with which the interest rate on the arranged loan is revised.
b The cumulative change in interest rates is shown for two cycles between month 0 and month 9. In 2022 month 0 corresponds to December 2021 and in 2005 to September 2005.
c The cumulative change in interest rates is shown for two cycles between month 0 and month 9 in 2022 and between month 0 and month 7 in 2010. In 2022 month 0 corresponds to December 2021 and in 2010 to September 2010.

the rise in money market interest rates on this occasion. Therefore, bank funding costs would not have been as affected as in other episodes and would have exerted less pressure on financial institutions to pass them through to the price of credit. The scant response in terms of deposit remuneration might be related, in no small part, to the ample liquidity and high deposit-to-credit ratios in the banking system in the current situation. Additionally, it should be borne in mind that, unlike in prior cycles of interest rate hikes, the spread between the remuneration of deposits and money market interest rates was very high on this occasion. The latter interest rates were in negative territory whereas those on deposits did not stand below zero, except in very specific cases. However, since June 2022 the spread between interbank rates and bank deposit rates has been wider than that observed in historical normal times. Accordingly, financial institutions will foreseeably start to raise the remuneration of bank deposits in the coming months.

In order to assess the pass-through of market interest rates to the average costs of outstanding debt, Charts 5

Chart 5
CUMULATIVE CHANGE IN THE COST OF THE OUTSTANDING STOCK OF LOANS FOR HOUSE PURCHASE AND IN THE MARKET INTEREST RATE (a) (b)

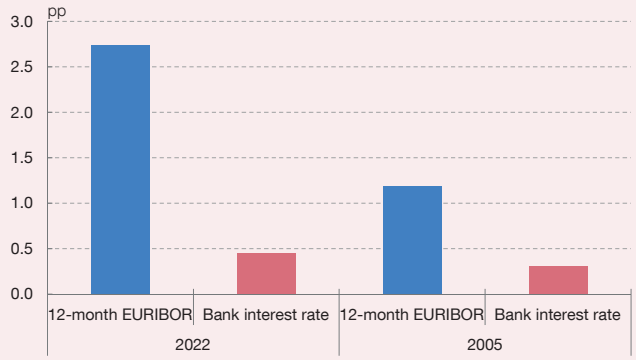
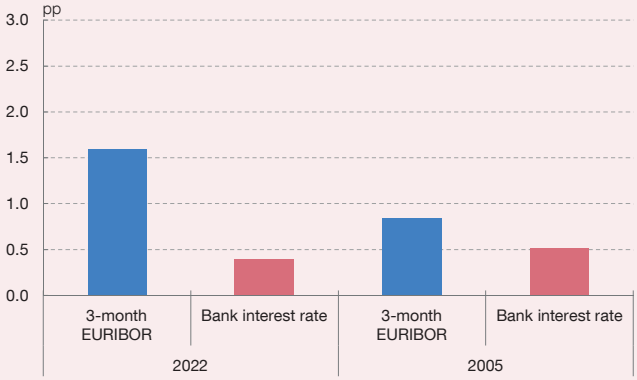


Chart 6
CUMULATIVE CHANGE IN THE COST OF THE OUTSTANDING STOCK OF LOANS TO NFCs AND IN THE MARKET INTEREST RATE (a) (b)



SOURCE: Banco de España.

a Bank lending interest rates are narrowly defined effective rates (NDERs), i.e. they exclude related charges, such as repayment insurance premia and fees.
b The cumulative change in interest rates is shown for two cycles between month 0 and month 9. In 2022 month 0 corresponds to December 2021 and in 2005 to September 2005.

and 6 illustrate, respectively, the cumulative changes in these costs and in market interest rates for loans to households for house purchase and loans to NFCs in the current cycle and in the 2005 cycle.[6] The results show that, in the loans for house purchase segment, the speed at which 12-month EURIBOR is passed through to the average cost of outstanding debt is slower (16%) than that observed in the 2005 hike cycle (26%). This is in line with the increase in the relative weight of fixed-rate mortgage loans in the outstanding stock of mortgage loans in recent years,[7] which appears to have led to a slower pass-through. Meanwhile, between December 2021 and September 2022 the average cost of the outstanding stock of loans to NFCs increased by 25% of the change observed in the benchmark market rate (3-month EURIBOR), clearly lower than the 61% pass-through observed in 2005. The slower pass-through in the current cycle may be related to the firms' funding structure, with a smaller share of loans with rates that are revisable in the short term, as a result of the extension of the average life of the loans, and to the slower pass-through associated with new loans. The presence of ICO-backed loans, which have relatively long terms and are predominantly at fixed rate, also appears to be contributing to the slower pass-through.

In conclusion, the evidence presented in this box suggests that the pass-through of market rate increases to the cost of new bank loans is slower in the current cycle than in previous episodes. The same finding is obtained when analysing the impact on the cost of outstanding debt for firms and of loans to households for house purchase. This means that, for the same change in interest rates, with all other variables remaining constant, debt repayment capacity deteriorates in the near term to a lesser extent than in the past. In any event, the financing cost of loans to households and firms must remain subject to close monitoring since, as monetary conditions tighten further and the amortisation of current loans continues, the pass-through could be expected to be larger than that seen so far.

6 The average interest rates on outstanding debt are not adjusted for seasonal or irregular components, as their performance is more stable than that of average interest rates on new lending.

7 The proportion of fixed-rate mortgage loans has risen in recent years to represent around 25% of the mortgage loan portfolio in 2021. For more details, see Asociación Hipotecaria Española (2022), "Un análisis dinámico de la cartera hipotecaria española. Segundo semestre de 2021".

2

FINANCIAL SECTOR RISKS AND RESILIENCE

Despite the growing macro-financial stress, bank lending in Spain was steady in the first half of the year, with growth in some portfolios, such as loans for house purchase. Banks' balance sheet quality also improved in the period, with NPLs, Stage 2 loans, forborne loans and foreclosures all lower. Ordinary net profit in the sector also evolved favourably, underpinned by the improvement in net interest income and fees and commissions. Meanwhile, in the 12 months to June 2022, the average CET1 ratio of the Spanish banking sector fell, essentially owing to the growth in risk-weighted assets (RWAs). However, sector solvency remains above the pre-pandemic level.

In any event, were the macroeconomic risks described in the previous chapter to materialise, the adverse impact on banks' profitability and solvency could be significant. Rising interest rates will foreseeably boost banks' income, but they will also put upward pressure on their funding costs. In particular, the pass-through of higher market rates to the cost of deposits may increase going forward. Moreover, higher borrowing costs for households and firms, together with a drop in their real income owing to higher inflation, will reduce their ability to pay, which in turn could trigger a significant increase in impairment provision costs. In this respect, the Banco de España's stress tests reflect high aggregate resilience in the banking sector to an adverse scenario of materialisation of macro-financial risks, even though this would entail a certain degree of capital charge and the impact is uneven across banks according to their business model. Thus, banks need to implement a prudent provisioning policy and plan their capital policy correctly, to sufficiently factor in the prevailing high level of uncertainty.

2.1 Deposit institutions

2.1.1 Balance sheet structure, risks and vulnerabilities

Credit risk

Bank lending was stable in Spain in the 12 months to June 2022. The outstanding amount of loans extended to the resident private sector fell by 0.1% year-on-year in June (see Chart 2.1.1). Excluding credit extended to other financial corporations, credit to the non-financial private sector also posted moderate growth, up 0.5% year-on-year.

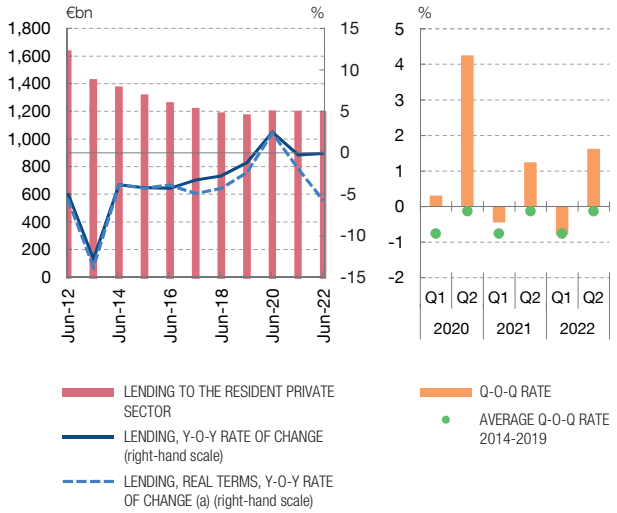
However, lending decreased in real terms owing to high inflation. Specifically, the year-on-year rate of change of credit to the resident private sector in real terms in

Chart 2.1

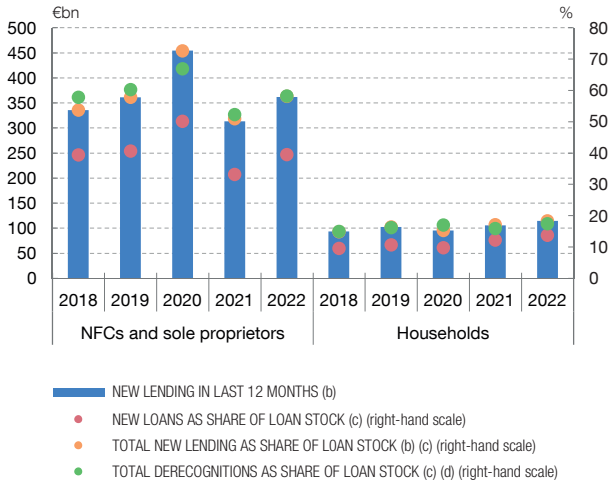
IN NOMINAL TERMS, LENDING TO THE RESIDENT PRIVATE SECTOR HELD STEADY IN THE FIRST HALF OF 2022, THANKS TO THE BALANCE BETWEEN DERECOGNITIONS AND NEW LENDING

The growth in new lending to households and non-financial corporations to June 2022 was almost fully offset by the increase in derecognitions. However, the high inflation in recent months has led to a sharp contraction in lending in real terms. Given the low pass-through of inflation to private agents' income, this decrease in real lending is not indicative of a widespread reduction in households' and firms' debt burden.

1 VOLUME OF LENDING AND YEAR-ON-YEAR RATE OF CHANGE
Business in Spain, ID



2 VOLUME OF NEW LENDING IN LAST 12 MONTHS.
DATA AT JUNE FOR EACH YEAR
Business in Spain, ID



SOURCE: Banco de España.

a The "lending, real-terms rate of change" series is obtained taking into account its composition, deflating the portion of lending to households for non-business purposes using CPI, and all other lending (to NFCs, financial corporations and sole proprietors) using the GDP deflator.
b New lending is the sum of new loans extended and increases in principal owing to drawdowns under existing credit lines.
c Considering the loan stock at June of the previous year.
d Derecognitions include repayments, write-offs, securitisations and portfolio sales.

June 2022 was 5.8% (compared with 1.9% in June 2021). In any event, given the low pass-through of inflation to private agents' income, this decrease in real lending is not indicative of a widespread reduction in households' and firms' debt burden.

Stable lending in nominal terms is a consequence of the balance between new lending and derecognitions (owing to repayments, write-offs, securitisations and portfolio sales) (see Chart 2.1.2). In this respect, in the case of loans to NFCs and sole proprietors, the share of both new lending and derecognitions[1] in the 12 months to June 2022 amounted to around 60% of the stock existing at June 2021, representing virtually no change in that period.[2] The distribution of new lending

1 New lending includes new loans and increases in amounts withdrawn under pre-existing credit lines. Derecognitions include repayments, write-offs, securitisations and portfolio sales.

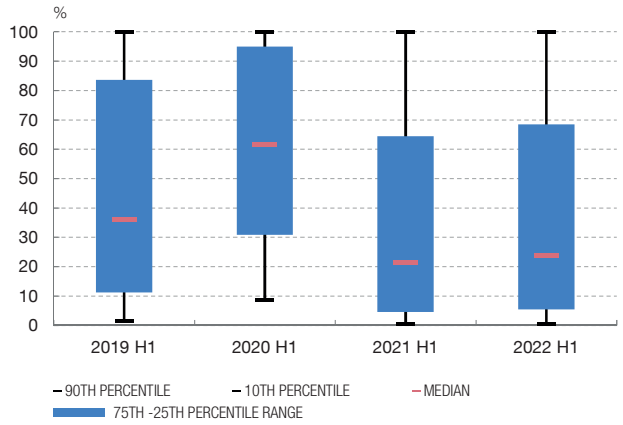
2 The latest data available for 2022 Q3 point to greater dynamism in the stock of credit to non-financial business, which will have to be confirmed as more data become available in the coming quarters.

Chart 2.2

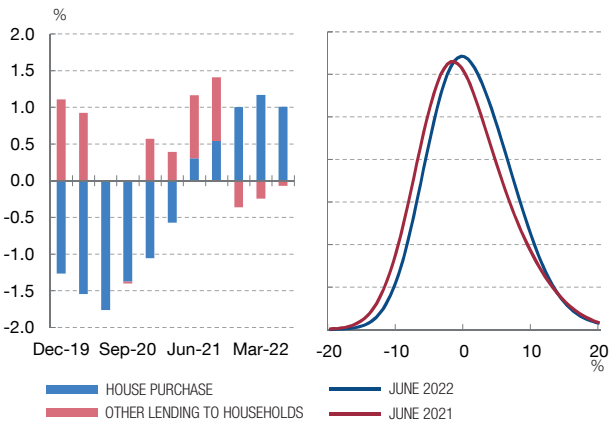
THE CONTRIBUTION OF NEW LENDING TO THE CORPORATE LOAN STOCK ROSE VERY MODERATELY IN THE FIRST HALF OF THE YEAR, WHILE LOANS FOR HOUSE PURCHASE CONTINUED TO UNDERPIN THE GROWTH IN LENDING TO HOUSEHOLDS

The distribution of new lending among firms as a proportion of their total loan stock shifted upwards slightly in the first half of the year, both at the median level and in other deciles. The stock of loans to households rose by 0.9% year-on-year in June 2022, largely owing to loans for house purchase. The distribution of the growth in loans for house purchase shifted upwards slightly in June 2022 compared with the same period a year earlier.

1 DISTRIBUTION OF SHARE OF NEW LENDING AS PROPORTION OF EXISTING LOAN STOCK IN FIRST HALF-YEAR (a)



2 CONTRIBUTIONS TO THE Y-O-Y RATE OF CHANGE OF LENDING TO HOUSEHOLDS (L-H PANEL) AND DISTRIBUTION OF BANKS BY THE Y-O-Y RATE OF CHANGE OF LOANS FOR HOUSE PURCHASE (R-H PANEL) (b)
Business in Spain, ID



SOURCE: Banco de España.

a The share of new lending is calculated for each firm as the volume of new loans arranged in the half-year, divided by the volume of their loans at the end of the half-year. The chart depicts the distribution of this ratio for all firms reporting new loans to the Central Credit Register (CCR) in the half-year; firms that have not arranged new loans (whose ratio would be 0%) are not considered. A figure of 100% indicates that the firm's previous loan amount was zero. Non-financial corporations only.

b The chart depicts the density function of the year-on-year rate of change of loans for house purchase for Spanish deposit institutions, weighted by the amount of loans for house purchase. The density function is estimated using a kernel estimator, which enables non-parametric estimation and provides a continuous, smoothed graphic representation of the function.

among firms as a proportion of their total loan stock rose somewhat in the first half of the year, both for median-level firms (23.7% of their loan stock had been drawn in the first six months of 2022, compared with 21.3% in the same period a year earlier) and for firms in other deciles (see Chart 2.2.1). This indicates that there are no widespread signs of a rapid build-up of new credit risk in this segment in the first part of the year. For households, in the 12 months to June 2022 new lending as a proportion of their total loan stock was almost 1 pp higher than derecognitions, resulting in moderate growth in that total. Also noteworthy was the flow of new lending, both to business and households, which exceeded the 2019 pre-pandemic levels.

The stock of loans to households rose by 0.9% year-on-year to June 2022, driven by growth in loans for house purchase. Loans for house purchase rose by 1.3% year-on-year in June 2022, compared with 0.4% a year earlier, more than offsetting the drop in lending for all other purposes, down 0.4% year-on-year. Thus, the positive

contribution of loans for house purchase was a determinant factor in the growth in the stock of loans to households in the 12 months to June 2022 (see Chart 2.2.2, left-hand panel). The distribution between banks of the growth in loans for house purchase held relatively steady between June 2021 and June 2022, showing just a moderate shift upwards (see Chart 2.2.2, right-hand panel).

The rate of decline in the volume of NPLs has quickened, with rates similar to those observed pre-pandemic. In June 2022, the year-on-year rate of change of non-performing loans to the resident private sector stood at 12.4%, down more than 4 pp on the previous quarter (see Chart 2.3.1). This sharper decline, observed among NFCs and sole proprietors (-9.2%) and households (-16.7%) (see Chart 2.3.2), was widespread across banks and is explained by fewer new NPLs, increasing collections and, especially, some banks' sales of troubled asset portfolios. This in itself is a positive sign of the banking sector's capacity to manage credit risk, as the markets for such impaired assets are especially sensitive to uncertain environments such as the present one. By contrast, non-performing consumer loans are still 10% above their pre-pandemic level, despite falling by 9.5% in the 12 months to June 2022.

The NPL ratio stood at 3.8% in June 2022, below 4% for the first time since December 2008. In the 12 months to June 2022 it fell by 0.5 pp, down 0.5 pp to 5.1% for NFCs and sole proprietors and down 0.7 pp to 3.1% for households. The NPL ratio for loans to the resident private sector has decreased by 1 pp since December 2019 (see Chart 2.3.1).

Despite the overall decline in NPLs, credit quality impairment is observed in some sectors. Specifically, in the business sectors most severely affected by the pandemic[3] the NPL ratio stood at 5.9% at December 2021, up from 5% at December 2019. In the first half of 2022, the NPL ratio in this segment (which accounts for 17.9% of total credit to non-financial business at June 2022) continued to increase, albeit slowly, standing at 6.1% at June (see Chart 2.3.3). Meanwhile, in the sectors moderately affected or largely unaffected by the pandemic, the NPL ratio fell steadily in this period. The sectors most severely affected by the pandemic benefited the most in the first half of the year from the lifting of the health restrictions. However, they now face new risks owing to the deterioration of the macroeconomic outlook, with an already weakened financial position as a result of the pressures on their profitability in the period 2020-2021.

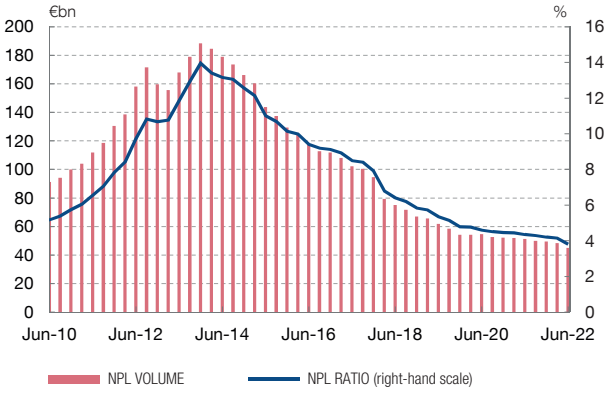
3 Credit to the most severely affected sectors is proxied by credit to sectors whose turnover fell by more than 15% in 2020 and that can be identified in the FI-130 regulatory return; specifically, hospitality, manufacture of refined petroleum products, social services and entertainment, transportation and storage, and manufacture of transport equipment. Credit to sectors moderately affected is proxied by credit to the following sectors as per the FI-130 regulatory return: manufacture of basic metals, manufacture of machinery, other manufacturing, professional services, extractive industries, wholesale and retail trade, and repair of vehicles. All other productive activities comprise the group of sectors that were largely unaffected by the pandemic.

Chart 2.3

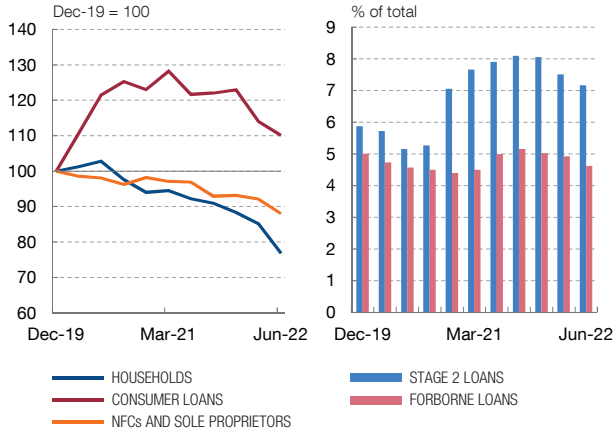
IN THE LAST HALF-YEAR, BOTH NPL VOLUME AND THE NPL RATIO CONTINUED TO DECLINE, WHILE STAGE 2 AND FORBORNE LOANS ALSO FELL AS A PERCENTAGE OF THE TOTAL

NPLs of the resident private sector fell by 12.4% year-on-year in June 2022. NPL ratios also fell (down to below 4% for the first time since 2008), as did Stage 2 and forborne loans. The fall in NPLs was most marked in lending to households, partly owing to wholesale sales of troubled asset portfolios. By business sector, NPLs only rose – albeit very moderately – in the sectors most severely affected by the pandemic. Firms with Stage 2 loans in June 2022 had worse ROA and debt ratios, which makes them more vulnerable to macro-financial deterioration.

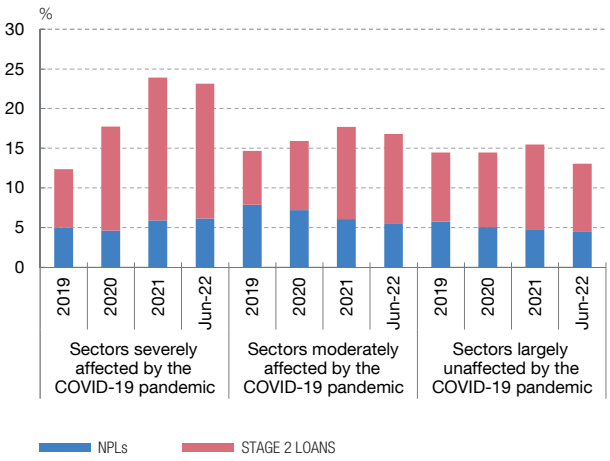
1 NPLs AND NPL RATIO OF THE RESIDENT PRIVATE SECTOR
Business in Spain, ID



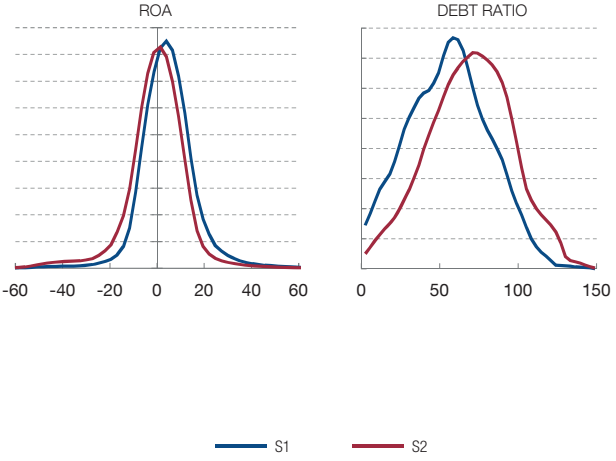
2 NPL VOLUME (L-H PANEL) AND SIGNS OF EARLY IMPAIRMENT IN LENDING TO THE RESIDENT PRIVATE SECTOR (R-H PANEL) (a)
Business in Spain, ID



3 SHARE OF NON-PERFORMING AND STAGE 2 LOANS. NFCs AND SOLE PROPRIETORS (b)
Business in Spain, ID



4 DISTRIBUTION OF STAGE 1 AND STAGE 2 LOANS BY DEBTOR FIRM CHARACTERISTICS, JUNE 2022 (c)
Business in Spain, ID



SOURCE: Banco de España.

a Stage 2 and forborne loans, as their respective share of total credit to the resident private sector.

b Credit to the most severely affected sectors is proxied by credit to sectors whose turnover fell by more than 15% in 2020 and that can be identified in the FI-130 regulatory return; specifically, hospitality, manufacture of refined petroleum products, social services and entertainment, transportation and storage, and manufacture of transport equipment. Credit to sectors moderately affected is proxied by credit to the following sectors as per the FI-130 regulatory return: manufacture of basic metals, manufacture of machinery, other manufacturing, professional services, extractive industries, wholesale and retail trade, and repair of vehicles. All other productive activities comprise the group of sectors that were largely unaffected by the pandemic. The 2019, 2020 and 2021 data as at December.

c The chart depicts the ROA and debt ratio density functions for firms with Stage 1 (performing) and Stage 2 (SICR) loans, weighted by the loan amount drawn by each firm. ROA is the return on assets, and the debt ratio the ratio of interest-bearing borrowing to net assets. The density function is estimated using a kernel estimator, which enables non-parametric estimation and provides a continuous, smoothed graphic representation of the function. The ROA and debt ratio are obtained from the Central Balance Sheet Data Office (CBSO) database at the 2020 close, while the information on the credit quality of loans to firms are taken from CCR data at June 2022. The chart does not consider firms with ROA or a debt ratio above (below) the 95th (5th) percentile of the distribution.

The proportion of Stage 2 exposures[4] and forborne loans decreased in the first six months of the year, although Stage 2 exposures remain above their pre-pandemic levels. Stage 2 loans peaked as a proportion of the total stock of credit to the resident private sector at 8.1% in September 2021 (see Chart 2.3.2) and then decreased, reaching 7.2% in June 2022. Specifically, in the business sectors most severely affected by the pandemic, Stage 2 loans accounted for 18% of the total in December 2021, and fell slightly, to 17%, in the first half of 2022. In the business sectors moderately affected and largely unaffected by the pandemic, at June 2022 Stage 2 loans accounted for 11.3% and 8.6%, respectively (see Chart 2.3.3). In the resident private sector overall, Stage 2 loans continue to account for a higher proportion than in the pre-pandemic period (5.9% at December 2019). The distribution at June 2022 of profitability (ROA) and debt ratios among firms with Stage 2 loans is worse than that among firms whose loans are classified as performing (see Chart 2.3.4), consistent with the fact that Stage 2 exposures are considered lower credit quality. Meanwhile, forborne loans, which are also generally associated with a higher probability of default (and whose NPL ratio at June 2022 was 50.4%), performed similarly to Stage 2 loans. Their share of total loans peaked in September 2021 at 5.2% and then fell to 4.6% at June 2022 (see Chart 2.3.2), in this case below the pre-pandemic figure (5%).

Foreclosed assets totalled €21.3 billion in June 2022, a decrease of €4.6 billion (-17.8%) compared with June 2021. This rate of decline is similar to that observed in December 2021 (-16.7%), but lower than the rates recorded in the years immediately preceding the onset of the pandemic (-28.8% year-on-year in December 2019), when major efforts were made to remove these assets from balance sheets, in particular through wholesale portfolio sales. Foreclosed assets were lower across the board at June 2022.

Loans backed by the Official Credit Institute (ICO) extended to firms and sole proprietors continued to see some impairment, but at a slower pace than in previous six-monthly-periods, while the credit quality of loans outstanding linked to expired moratoria improved somewhat. Drawing on data from the Banco de España's Central Credit Register (CCR), the percentage of ICO-backed Stage 2 loans rose from 20.2% in December 2021 to 22.8% in June 2022 (see Chart 2.4.1). Meanwhile, the percentage of NPLs in the ICO-backed loan portfolio rose by somewhat more than 1 pp, from 3.5% to 4.8% in the same period. Nevertheless, the proportion of customers in the total ICO loan portfolio with some non-performing exposure (whether or not ICO-backed) decreased slightly compared with the previous quarter, from 12.9% to 12.6%. Box 2.1 analyses the relationship in ICO-backed loans between maturity extensions and grace period expiry, on the one

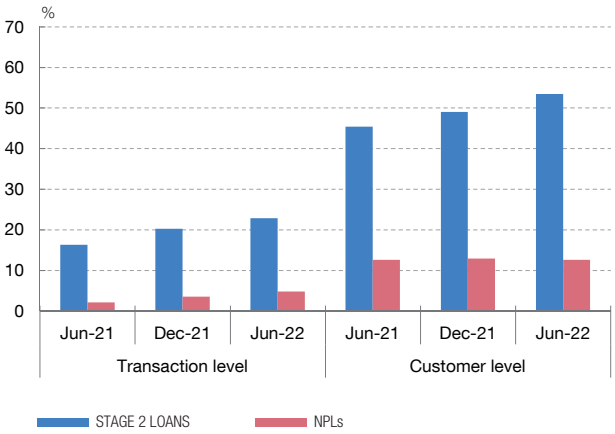
4 Pursuant to Circular 4/2017, a loan is classified as a Stage 2 exposure when credit risk has increased significantly since initial recognition, but no event of default has occurred.

Chart 2.4

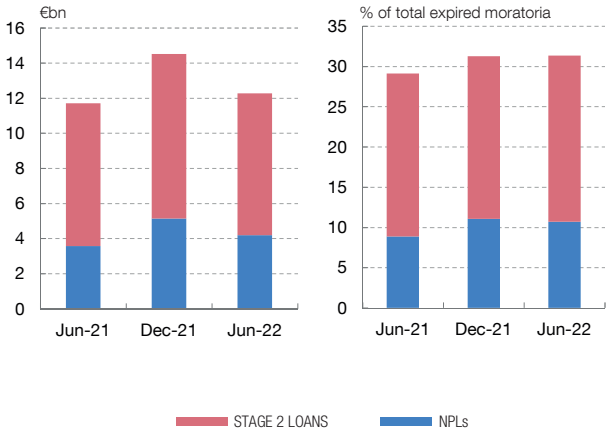
THE PACE OF IMPAIRMENT OF THE ICO LOAN PORTFOLIO WAS SLOWER IN THE FIRST HALF OF 2022 THAN IN PREVIOUS QUARTERS, WHILE THE NPL RATIO OF LOANS OUTSTANDING LINKED TO EXPIRED COVID-19 MORATORIA FELL SLIGHTLY

Within the ICO-backed loan portfolio, Stage 2 loans and NPLs rose by close to 2 pp and 1 pp, respectively, in the first half of the year. However, the proportion of customers in this portfolio with some non-performing exposure (whether or not ICO-backed loans) decreased from 12.9% to 12.6% in the same period. In the case of outstanding loans linked to expired or cancelled moratoria, 10.7% were non-performing at June 2022, compared with 11.1% at December 2021, although the proportion of Stage 2 loans in this portfolio rose slightly in the period.

1 CREDIT QUALITY OF STOCK OF ICO-BACKED LOANS (a)
Business in Spain. ID



2 NPLs AND STAGE 2 LOANS WITH EXPIRED COVID-19 MORATORIA (b)
Business in Spain. ID



SOURCE: Banco de España.

a In the transaction-level analysis, the proportional volume of ICO-backed loans to firms and sole proprietors that are non-performing or Stage 2 loans is measured. The customer-level analysis assesses for each firm and sole proprietor with an ICO-backed loan their total drawn exposure in all financial transactions reported to the CCR with any system institution. If any of the customer's transactions are troubled (Stage 2 or non-performing) above a minimal materiality threshold, they are flagged as impaired. The proportion of the volume of ICO-backed loans associated with customers that have any such flag considering all their credit transactions is then calculated.

b Includes, at each date, loans, with or without mortgage, with expired moratoria under the various programmes implemented since April 2020 to mitigate the effect of the COVID-19 pandemic. More than 80% of the loans with expired moratoria are mortgage loans.

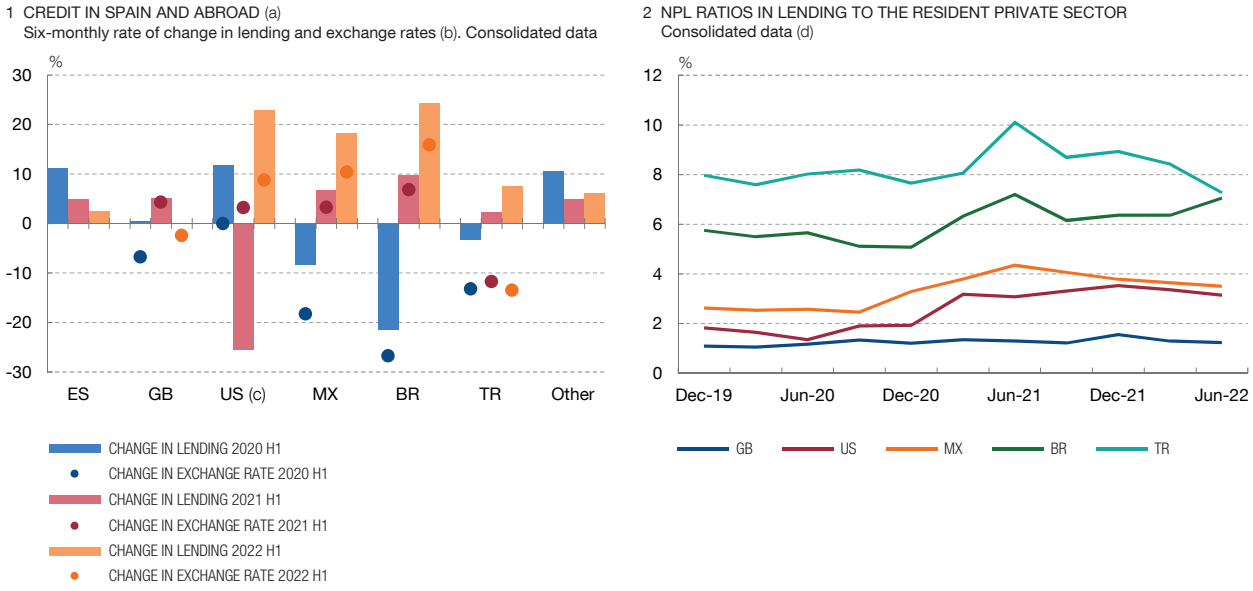
hand, and their credit quality, on the other. In the case of outstanding loans linked to expired moratoria, 10.7% were non-performing at June 2022, compared with 11.1% at December 2021, while 20.6% were classified as Stage 2 exposures at June 2022, up slightly from 20.2% at December 2021 (see Chart 2.4.2).

The good credit quality performance in the first six months of the year enables the banking sector to face the present uncertain macroeconomic scenario from a better starting point, but it is not sufficient to rule out a poorer performance in the coming quarters. For a comprehensive credit quality assessment, a forward-looking approach must be taken and its connection with the expected macroeconomic conditions – particularly GDP and interest rates, which are evolving unfavourably – considered. Box 2.2, which presents the results of the Banco de España's stress tests in the event of severe worsening of the macroeconomic situation, beyond the core expectations, notably considers the credit quality

Chart 2.5

LENDING ABROAD EXPANDED IN THE FIRST HALF OF 2022, ASSISTED BY THE DEPRECIATION OF THE EURO AGAINST OTHER CURRENCIES, WHILE THE NPL RATIOS OF THESE EXPOSURES REMAINED CONTAINED

Spanish deposit institutions' business abroad grew by 8.3% between December 2021 and June 2022. The first half of the year saw strong lending growth in the United States, Mexico and Brazil, but a slowdown in the United Kingdom. The depreciation of the euro against the currencies of several of the main countries that account for the bulk of the business abroad was conducive to this expansion. NPL ratios have fallen in recent quarters in the main foreign markets where Spanish banks operate, save in Brazil.



SOURCES: Datastream and Banco de España.

a Includes all loans and advances in local and non-local activity in each country (central banks, general government, credit institutions, other financial corporations, NFCs and households).
b A positive sign in the change in the exchange rate denotes currency appreciation against the euro.
c The extremely negative value of the change in lending in the United States in 2021 H1 is due to a divestment made by a bank.
d These ratios are slightly higher than those presented in previous FSRs as they refer to the total resident private sector in each country, thus excluding central banks, general government and credit institutions, which generally have very low NPL exposures and were included in the calculation of NPL ratios in previous FSRs. This aligns the FSR with the changes made by the ECB in its publications.

impairment channel within a broader assessment of the degree of overall solvency of the banking sector.

The volume of Spanish deposit institutions' business abroad rose by 8.3% in the first half of 2022. This is higher than in the first half of 2021 (1.1%). Compared with the changes observed in the first six months of recent years, credit volume saw strong growth in the United States (23%), Mexico (18.3%) and Brazil (24.4%), largely as a result of exchange rate fluctuations in those countries' currencies against the euro (see Chart 2.5.1). As flagged in previous FSRs, Spanish banks' net non-local currency position in the emerging market economies where they operate is low, which in any event mitigates the financial risk of exchange rate fluctuations. NPL ratios in lending to the resident private sector in the different countries in which Spanish deposit institutions operate generally fell in the 12 months to June 2022, save in Brazil (see Chart 2.5.2).

Liquidity and financing conditions

The Eurosystem's balance sheet has remained stable in recent months, in line with central banks' monetary policy normalisation strategy. The volume of the purchase programmes has increased slightly (by €31 billion) since the cut-off date of the last FSR, although only up to June, when the ECB announced that it would end its net purchases. Also, some early redemptions, totalling €83 billion, have been made under TLTRO III. European banks' surplus liquidity has risen by €113 billion, with a transfer from the current accounts banks hold at the central bank to the deposit facility, which following the monetary policy rate hikes is now paying interest (see Chart 2.6.1).

The recent monetary policy rate hikes have been passed through to money market rates. The euro area short-term rate (€STR)[5] has moved in line with the respective 50 bp and 75 bp policy rate hikes made in July and September.[6] Yet these moves have still not been fully passed through to repo rates,[7] in a setting in which a scarcity of collateral is exerting downward pressure on interest rates in this segment. The ECB has decided to temporarily remove the interest rate ceiling for remuneration of general government deposits,[8] to safeguard effective monetary policy transmission and orderly market functioning, against a backdrop of money market adjustment to the return of positive interest rates (see Chart 2.6.2). On the interbank market, the 3-month EURIBOR has also been marked by the recent interest rate rises and expectations of further rate hikes.

Spanish banks' wholesale market funding costs for the different debt instruments have continued to rise in recent months.[9] The monetary policy rate hikes[10] in 2022 have contributed to the increase in the returns demanded on bank debt on the secondary market, most notably in the case of senior debt instruments. Specifically, during 2022, the correlation between the return demanded on senior debt instruments and the risk-free rate (OIS) has been over 95%. Meanwhile, returns on contingent convertible debt instruments (CoCos) have posted lower growth and are below the levels observed during the pandemic (see Chart 2.6.3).

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5 The €STR reflects the unsecured overnight borrowing costs of euro area banks. Both the interest rate and the volume traded are calculated and published each business day by the ECB, drawing on the information provided by the 48 euro area banks subject to Money Market Statistical Reporting (MMSR) requirements.

6 On 21 July the ECB announced a rate rise of 50 bp, with effect from 27 July, followed on 8 September by a rate rise of 75 bp, with effect from 14 September.

7 Calculated as the overnight rates on transactions made by banks subject to MMSR requirements using as collateral debt issued by Spanish, German, Italian and French general government agencies.

8 Before the September 2022 announcement, the interest rate applied to these deposits was the €STR or the deposit facility rate (DFR), whichever was lower, up to a maximum of 0%.

9 Secondary debt market prices provide a measure of the implicit cost of wholesale funding for banks, even if there are no active issues at all dates. This funding cost is the average yield traded on the secondary market for the different types of bonds issued by listed banks.

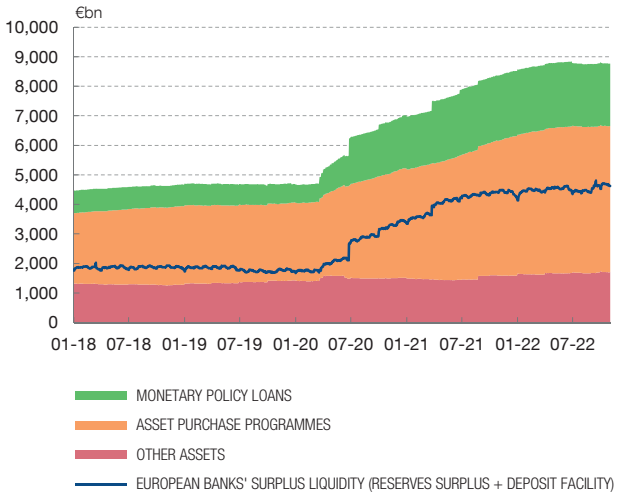
10 The benchmark rate is the risk-free rate (OIS) at the same term as the unsecured debt portfolio, which represents banks' highest issuance volume and outstanding debt.

Chart 2.6

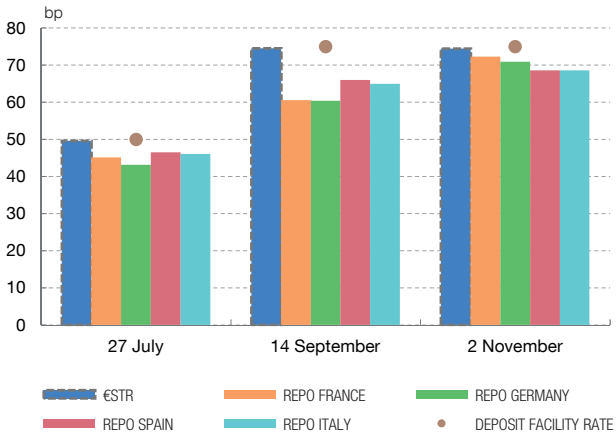
MONETARY POLICY TIGHTENING HAS STEADIED THE ECB'S BALANCE SHEET, ALTHOUGH IT REMAINS WELL ABOVE ITS PRE-PANDEMIC LEVEL, WHILE THE INTEREST RATE RISES HAVE PARTIALLY PASSED THROUGH TO THE MONEY MARKETS AND WHOLESALE FUNDING

On the money markets, the policy rate rises have passed through fully to the euro area short-term rate (€STR) in the unsecured segment, but only partially to repo rates. Expectations of higher interest rates have also contributed to the rising cost of Spanish bank debt on the secondary market. Spanish banks have been very active in the debt issuance market, considering the potentially higher future costs and the need to meet regulatory requirements.

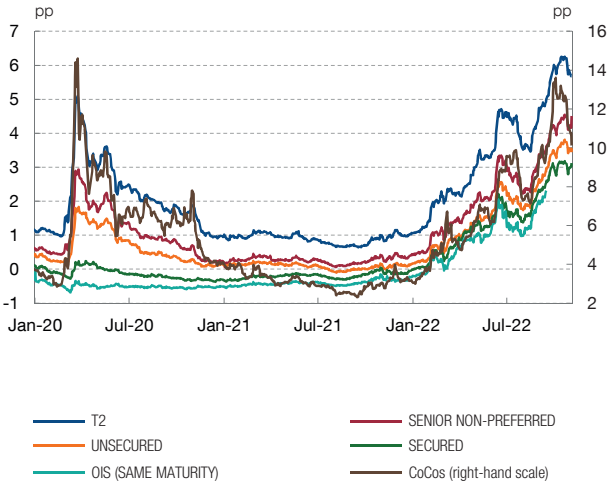
1 EUROSYSTEM BALANCE SHEET AND EUROPEAN BANKS' SURPLUS LIQUIDITY



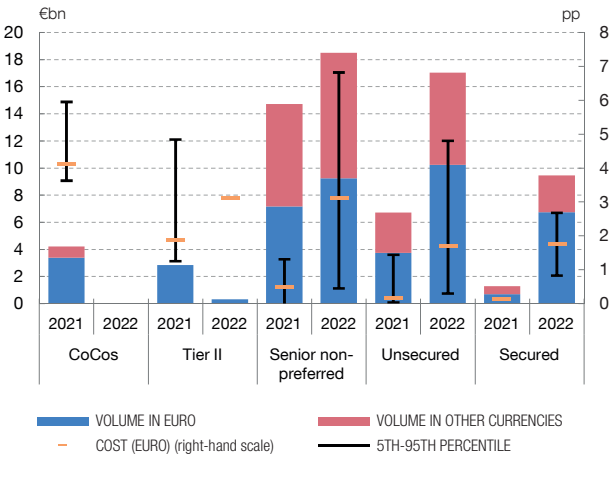
2 CHANGE IN MONEY MARKET RATES (a)



3 COST OF WHOLESALE BANK DEBT. SECONDARY MARKET. SPANISH BANKS (b)



4 ISSUANCE VOLUME AND COST BY INSTRUMENT TYPE. JAN-OCT 2021 vs JAN-OCT 2022. SPANISH BANKS (c)



SOURCES: Bloomberg, Dealogic, Thomson Reuters, MMSR and Banco de España.

a Intraday change on the day of the policy rate hikes (July, September and November) in the €STR and in overnight rates on transactions made by banks subject to MMSR requirements using as collateral debt issued by Spanish (ES), German (DE), Italian (IT) and French (FR) general government agencies.
b The cost is calculated as the weighted average by volume of the yield traded on the secondary market for the different types of bonds issued by listed banks. The OIS (Overnight Indexed Swap) at the same term as the average of the average unsecured debt maturity is shown. CoCos: debt qualifying as Tier 1 (contingent convertible debt); T2: debt qualifying as Tier 2; SNP: senior non-preferred debt (MREL-eligible).
c The cost of primary market issuance of euro-denominated bonds, comparing the period Jan-Oct 2021 and Jan-Oct 2022. In some categories the 5th-95th percentile range is not shown because there has been only one issue in the period.

Spanish banks have substantially reduced their subordinate debt (CoCos and Tier 2) issuance in 2022, and have increased their senior non-preferred (SNP) debt issuance. Spanish banks' subordinate debt issuance has decreased, largely because they had already reached the volumes required by prudential regulations in their previous years' issuance, and because these kind of instruments entail a relatively higher cost. The increase in SNP debt issuance[11] is in line with Spanish banks' need to comply with their supervisors' MREL requirements. More banks[12] have been able to issue SNP debt, which is less costly than the alternatives available to comply with MREL requirements (see Chart 2.6.4).

In a context in which central banks are lending less and interest rates are rising, the volume of senior debt issued by the banking sector has increased, with higher issuance costs. In the first nine months of 2022, the wholesale debt market was busier than in the same period of 2021. This can be attributed to an increase in the issuances of both secured senior debt and unsecured debt. These types of issuance enable banks to finance their activity as the end of the Eurosystem's refinancing operations (TLTRO III), whose funding terms were recently amended, approaches.[13] Moreover, the new debt has been issued at a higher cost, with greater heterogeneity across banks and in terms of issuance dates. The market has been particularly active since July; thus, September saw around a quarter of all of the debt issuances made in the year overall. This, despite the fact that the cost of issuing debt has risen (see Chart 2.6.4), with a higher risk premium than at the start of the year, coinciding with the recent interest rate hikes. Nonetheless, this can be explained in part by the fact that central banks are expected to increase rates further in the coming months,[14] and that banks are looking to raise funds before this happens.

In terms of the conditions for issuing bank debt, the covered bond regulation and supervision regime has recently been strengthened under Royal Decree-Law 24/2021. Under this legislation,[15] which transposes European regulations and is a highly significant change for the Spanish market, an institution issuing these financial instruments must keep a special register of the pool of assets that serve as collateral vis-à-vis bond-holders throughout the bonds' lifetime. Such collateral must be enforceable even in the event of insolvency or resolution of the issuing credit institution. The new regulation also requires that a buffer of highly liquid assets

11 SNP debt was approved by law in 2017 and allows banks to comply with the minimum requirement for own funds and eligible liabilities (MREL).

12 In previous years, most SNP debt issues were made by the big listed banks.

13 Moreover, on 27 October, the ECB's Governing Council resolved to recalibrate the applicable interest rates. From 23 November 2022, the interest rate applicable to TLTRO III operations will be indexed, up to maturity or early repayment, to average applicable key ECB interest rates.

14 Rate expectations based on financial derivatives (OIS) suggest that the euro area terminal rate (i.e. the level monetary policy rates are expected to reach once the hiking cycle ends) could be as high as 3%.

15 Royal Decree-Law 24/2021 of 2 November 2021, transposing Directive (EU) 2019/2162 of the European Parliament and of the Council of 27 November 2019 on the issue of covered bonds and covered bond public supervision and amending Directives 2009/65/EC and 2014/59/EU.

be maintained to cover a potential net outflow of funds linked to covered bonds during 180 days.

The more stringent covered bond supervision regime is expected to affect banks' internal controls and the oversight carried out by the Banco de España. First, issuing banks will have to appoint a body to oversee the pool of collateral, ensuring compliance with the statutory and contractual requirements of the issuance, including supervision of any additions to or eliminations from the cover pool. Meanwhile, the Banco de España's supervisory functions will take in everything from authorising the oversight body to approving each individual covered bond issuance programme.

Deposits of households and NFCs account for a relatively large share of Spanish banks' liabilities compared with their European counterparts. According to the consolidated EBA data at June 2022, deposits of households and NFCs account for 36% and 15%, respectively, of the total liabilities of Spain's main banks, and thus constitute their main source of funding (51% overall). At European level, while deposits of households and NFCs fall short of the levels seen in Spain, they nonetheless have a key role to play in banks' funding structure, accounting for between 28% (Germany) and 50% (the Netherlands) of total liabilities (see Chart 2.7.1).

Sight deposits make up the bulk of the deposits taken in Spain, where the loan-to-deposit ratio is currently low.[16] In June 2022, as a result of the low interest rate setting of recent years, term deposits accounted for just 6.6% of total deposits, as compared with 40% in June 2005 and 55.4% in June 2011. Low interest rates have not deterred strong deposit growth in recent years, which has contributed to a very significant decline in the loan-to-deposit ratio of households and NFCs, down from 129% in June 2008, before the onset of the global financial crisis, to 74.2% in June 2022 (see Chart 2.7.2).

The level of pass-through of the recent rise in the 12-month EURIBOR to Spanish banks' deposit rates has so far been very small, and lower than on previous occasions.[17] The last 18 years have seen a close correlation between deposit rates and the 12-month EURIBOR, albeit with differences depending on term and counterparty (see Chart 2.7.3). However, the cumulative 325 bp rise in the 12-month EURIBOR recorded in the first nine months of 2022 has not passed through to interest rates on households' sight or term deposits to any appreciable degree. As far as businesses are concerned, while a degree of pass-through can be seen in

16 This analysis is based on data drawn from the regulatory information on interest rates that Spain's main banks must report to the ECB every month.

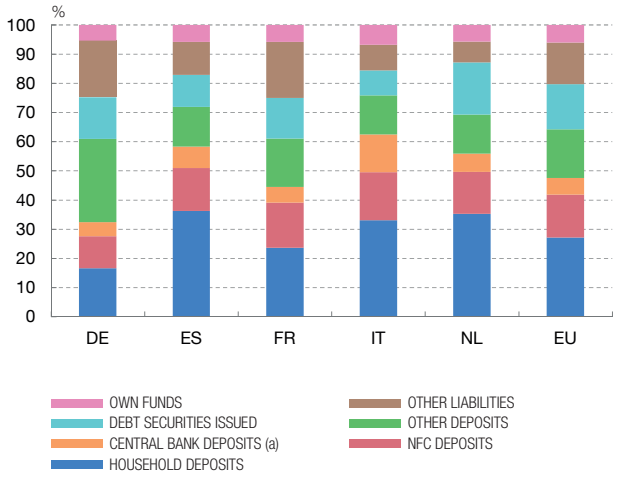
17 Based on the average interest rates on the outstanding balances of deposits as reported to the ECB, an econometric analysis has been conducted using a vector autoregressive model to explain the changes as a function of the 12-month EURIBOR and other macroeconomic variables. This modelling enables predictions to be made regarding the expected changes in commercial deposit rates based on a projected path for the 12-month EURIBOR and the other macroeconomic variables

Chart 2.7

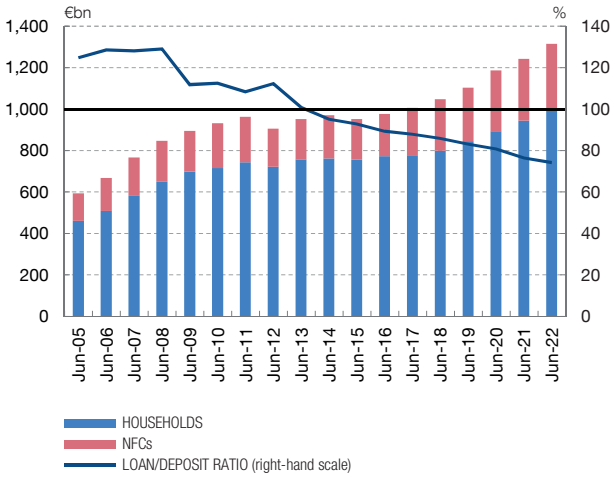
DEPOSITS OF HOUSEHOLDS AND NFCs CONSTITUTE THE MAIN COMPONENT OF SPANISH BANKS' LIABILITIES; SO FAR INTEREST RATE HIKES HAVE BARELY PASSED THROUGH TO THE COST OF THESE DEPOSITS

Deposits of households and NFCs constitute the main source of funding of Spanish banks and, to a lesser extent, their counterparts in Europe. In Spain, these deposits have seen significant growth in recent years, despite the low interest rate setting, which has led to a preponderance of sight over term deposits. Unlike in past rate hike cycles, the recent rise in reference interest rates has not yet passed through to commercial deposit rates.

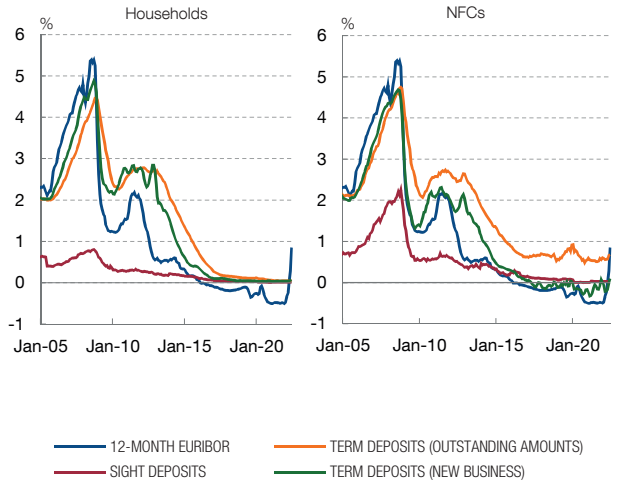
1 COMPOSITION OF LIABILITIES. EUROPEAN COMPARISON
Consolidated data, June 2022



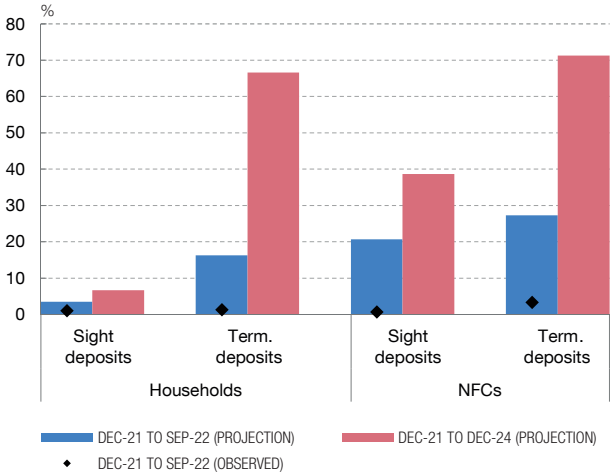
2 DEPOSITS OF HOUSEHOLDS AND NFCs AND THE LOAN/DEPOSIT RATIO (b)
Business in Spain, ID



3 DEPOSIT INTEREST RATES AND THE 12-MONTH EURIBOR
Households and NFCs



4 PASS-THROUGH OF AN INCREASE IN EURIBOR TO DEPOSIT INTEREST RATES (c)



SOURCE: EBA, ECB and Banco de España.

a Estimated based on the volume of central bank deposits (euro area) reported by all banks in each country and the proportion that the sample of banks included in the EBA's Risk Dashboard represents at consolidated level over the total system in terms of assets.
b The loan/deposit ratio includes only loans and deposits of households and NFCs.
c Pass-through is defined as the ratio of the cumulative change (in pp) in the commercial interest rate to the change in the 12M EURIBOR in the period considered. The changes in the commercial interest rates have been projected using a multivariate structural VAR model estimated using the information from the interest rate statements reported to the ECB, to which the projections on the 12M EURIBOR and other macroeconomic variables published by the Banco de España in October 2022 have been applied.

the case of term deposits, it has been very limited. Nevertheless, the pass-through from reference rates to deposit rates could gather pace in the coming months. Thus, the expected level of pass-through based on time series modelling is likely to be very low in the case of households' sight deposits (barely 7%), to approach

40% in the case of NFCs' sight deposits and to be around 70% for the term deposits of both households and NFCs (see Chart 2.7.4). The greater degree of pass-through to term deposit rates is also expected to lead to a shift in the balance between sight and term deposits, a process that has yet to begin to any meaningful extent.

2.1.2 Profitability and solvency

Profitability

In the first half of 2022, the Spanish banking sector posted consolidated net profit of €12.5 billion, spurred on by higher ordinary profit. Although the half-yearly net profit at June 2022 was down 9.3% year-on-year (see Annex 2), the June 2021 figure was skewed by the extraordinary profit[18] recognised in that period (see Chart 2.8.1[19]). Thus, setting such extraordinary profits aside, net profit in June 2022 was up 16.3% on the previous year. The net profit realised translates into a return on assets (ROA) of 0.61% (down 0.1 pp[20] from 0.71% in 2021) and a return on equity (ROE) of 10% (down 1.2 pp from 11.2% in June 2021). Excluding extraordinary items, ROA in June 2022 would have stood at 0.62% (up 0.06 pp from 0.56% in June 2021, see Chart 2.8.2), and ROE at 10.1% (up 1.3 pp from 8.9% in June 2021). Thus, banks' profits exceeded their cost of capital, which stood at around 7% in the first half of 2022. Based on the earnings reported by the listed banks in recent weeks, this positive performance appears to have continued through 2022 Q3.

Overall, the ROA of Europe's leading banking systems at June 2022 outperformed the average for the last two years, approaching the pre-pandemic figure. Together with its Italian counterpart, the Spanish banking sector's ROA was the highest of the main European countries, and stood above the euro area average (see Chart 2.9.1).

Meanwhile, the earnings abroad of Spanish banks with more significant international operations improved year-on-year in 2022 H1. This improvement

18 In 2021 H1 extraordinary gains were recognised as a result of a merger (whose net value stood at €2.9 billion: negative goodwill (€4.3 billion) plus a corporate income tax benefit (€0.6 billion), less extraordinary operating expenses stemming from the labour agreement and other integration costs (€2 billion)); the spin-off of an insurance company (€0.9 billion); the earnings of a US bank up until its sale on 1 June 2021 (€0.3 billion) and restructuring costs at the two main banks (-€1.2 billion). In 2022 H1 extraordinary losses were recognised as a result of the offices purchased by one bank (-€0.2 billion).

19 The ROA distribution at June 2021 showed two sets of abnormally high profits corresponding to the extraordinary gains of two banks, so a sizeable portion of the ROA distribution at June 2022 therefore stands to the right (i.e. recording a higher ROA) of the distribution at June 2021. Moreover, the ROA distribution across banks at June 2022 was concentrated at higher levels than in the period immediately preceding the pandemic (see Chart 2.8.1).

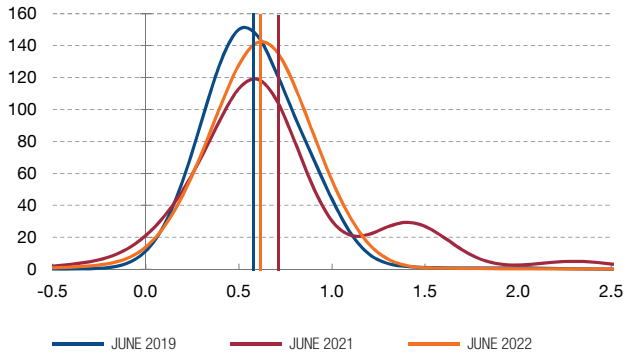
20 This negative year-on-year difference has widened due to the increase in average total assets (see Annex 1, showing the year-on-year change in total assets, a variable that is closely related, albeit not identical, to average total assets), which grew by 5.4% between June 2021 and June 2022. The same is true for ROE, albeit to a lesser degree since the year-on-year increase in average equity was considerably lower (1.6%).

Chart 2.8

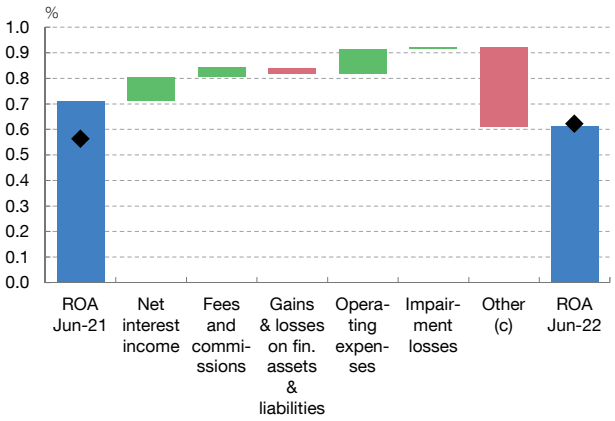
THE SPANISH BANKING SYSTEM'S ORDINARY PROFIT IN 2022 H1 INCREASED WITH RESPECT TO 2021

While the sector's net profit fell in the first half of 2022, this was due to the extraordinary profits recognised in 2021 H1, without which profitability would have risen. The ROA distribution across banks at June 2022 was concentrated at higher levels than in the period immediately preceding the pandemic. This improvement was largely due to the increases (in excess of 10%) in net interest income and fee and commission income. Impairment losses in the sector as a whole held relatively stable with respect to 2021.

1 DISTRIBUTION OF ROA (a)
Consolidated data



2 BREKDOWN OF CHANGE IN PROFIT
Consolidated net profit as a percentage of ATAs (b)



SOURCE: Banco de España.

a The chart depicts the density function of ROA for Spanish deposit institutions, weighted by average total assets. The density function is estimated by means of a kernel estimator, which enables non-parametric estimation and provides a continuous, smoothed graphic representation of the function. The vertical lines denote the average weighted ROA of the Spanish banking system as a whole in June 2019 (blue), June 2021 (red) and June 2022 (orange).

b The red (green) colour of the bars denotes a negative (positive) contribution of the corresponding item to the change in consolidated profit in June 2022 compared with June 2021. The black diamonds denote the ROA excluding extraordinary items. Specifically: in June 2021, extraordinary gains as the result of a merger (€2.9 billion), the spin-off of an insurance company (€0.9 billion), the earnings of a US bank up until its sale on 1 June 2021 (€0.3 billion) and extraordinary restructuring costs (-€1.2 billion); and in June 2022, the net impact of a purchase of offices by one bank (–€0.2 billion).

c Including, among others, the aforementioned extraordinary items.

extended to most of the key regions in which they operate, with the exception of the USA and Turkey, with Mexico seeing the biggest rise in profits (see Chart 2.9.2).

The increases in net interest income and fee and commission income were the main drivers of the positive profit performance in 2022 H1. At June 2022, net interest income and fee and commission income at the consolidated level had risen year-on-year at the same rate (11.2%).

The improvement in net interest income is due to a price effect and, above all, a quantity effect.[21] June 2021 to June 2022 saw the reversal of the downward trend

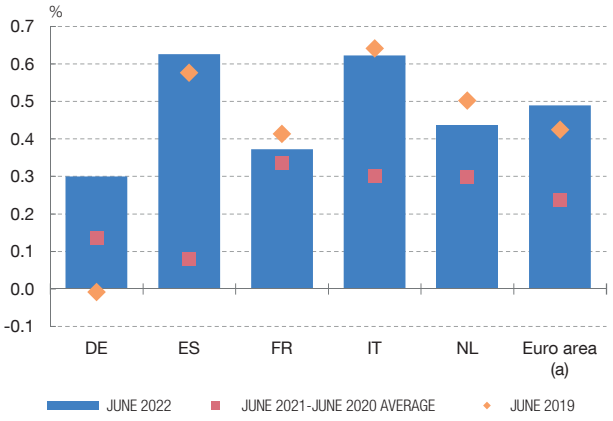
21 The quantity effect is calculated as the product of the change in investments (in the case of income) or funding (in the case of expenses) and the return (income) or cost (expenses) held constant at the values of the initial period. The price effect is calculated as the product of the change in return (income) or cost (expenses) and the investments (income) or funding (expenses) held constant at the initial period values. Once the price and quantity effects on interest income and expenses have been calculated, the effects on net interest income are calculated as the difference between the two.

Chart 2.9

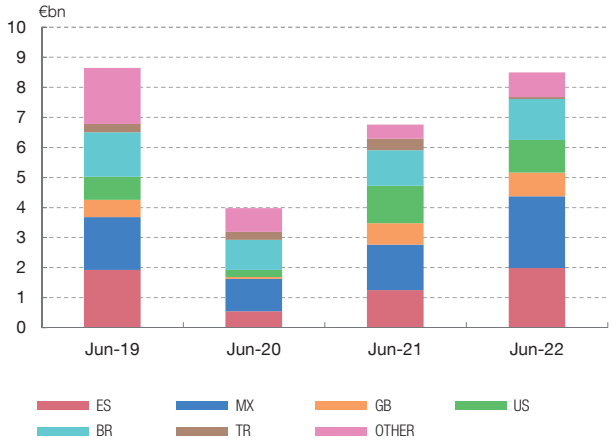
THE ROA OF THE BANKS IN THE MAIN EUROPEAN COUNTRIES STOOD AT PRE-PANDEMIC LEVELS IN 2022 H1, WHILE SPANISH BANKS' EARNINGS ABROAD CONTINUED TO PERFORM WELL

In 2022 H1, the ROA of the main European banking systems outperformed the average for the past two years, and was similar to prepandemic levels, with Spain (together with Italy) posting the highest figure. Meanwhile, Spanish banks' earnings at June 2022 rose in most of the countries in which they operate, with the United States and, in particular, Turkey, the only countries in which profits fell, while Mexico saw the largest increase.

1 RETURN ON ASSETS (ROA)
Consolidated data



2 GEOGRAPHICAL DISTRIBUTION OF ORDINARY PROFIT ATTRIBUTABLE TO THE PARENT OF BANKS WITH MORE SIGNIFICANT INTERNATIONAL ACTIVITY (b)
Consolidated data



SOURCES: EBA and banks' financial reporting.

a The average ROA of the euro area is calculated using the individual ROA data for each country contained in the EBA's Risk Dashboard, weighting each country by its total assets (a figure also drawn from the Risk Dashboard).
b Among the banks with significant international activity, this group includes the three in which such activity is more important and more extended in time, and non-recurring items in the period considered are excluded.

in net interest income seen in the two preceding years (see Chart 2.10.1). The increase in consolidated net interest income of over €3.5 billion was partly due to the price effect, with the positive impact of the interest rate hike on income outweighing the negative impact associated with expenses. To an even greater extent, the quantity effect also contributed to the improvement in net interest income, owing in part to the appreciation against the euro of some of the currencies of the main countries in which Spanish banks operate. Chart 2.10.2 depicts the correlation between the year-on-year change in net interest income (as a percentage of ATA) and ROA, showing how this correlation was more positive in the first half of 2022 than in the preceding years. By contrast, net interest income from business in Spain fell, since the price effect (negative) outweighed the quantity effect (positive). Net interest income is also expected to grow in Spain in the coming quarters as a result of the repricing of variable rate loans (and new lending at higher rates) due to the increase in the EURIBOR in recent months. However, this growth may be partially offset by a fall in volumes in the event of an economic slowdown.

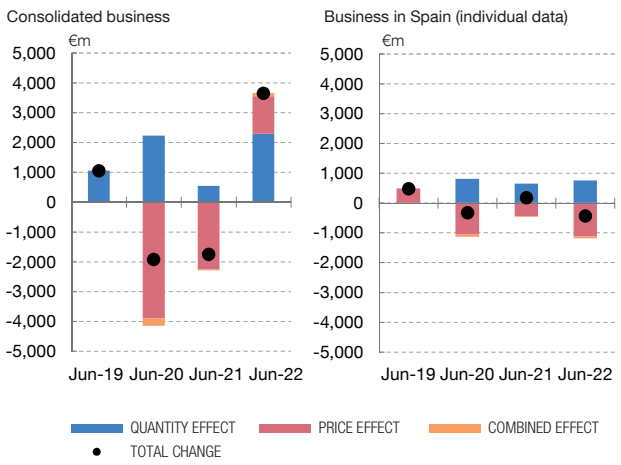
Operating expenses fell slightly, thus boosting net operating income, although excluding the extraordinary items in 2021 this expenditure item increased.

Chart 2.10

IN 2022 H1 CONSOLIDATED NET INTEREST INCOME INCREASED MARKEDLY WITH RESPECT TO PREVIOUS YEARS, CONTRIBUTING NOTABLY TO THE POSITIVE ROA PERFORMANCE

At consolidated level, the improvement in net interest income is due to a price effect and, above all, a quantity effect. The positive correlation observed in 2022 H1 between the change in net interest income and the change in net profitability was more marked than in recent years. By contrast, net interest income from business in Spain fell, since the negative price effect outweighed the positive quantity effect.

1 BREAKDOWN OF CHANGE IN NET INTEREST INCOME (a)



2 CORRELATION BETWEEN THE CHANGE IN NET INTEREST INCOME AS A PERCENTAGE OF ATAs AND THE CHANGE IN ORDINARY ROA (b)

SOURCE: Banco de España.

a The quantity effect is calculated as the product of the change in investments (in the case of income) or funding (in the case of expenses) and the return (income) or cost (expenses) held constant at the values of the initial period. The price effect is calculated as the product of the change in return (income) or cost (expenses) and the investments (income) or funding (expenses) held constant at the initial period values. The combined effect is a residual calculated as the difference between the total change and the sum of the price and quantity effects. The effects on net interest income are calculated as the difference between the effects on interest income and interest expense.

b The x-axis depicts the year-on-year change (in bp) in net interest income as a percentage of average total assets, and the y-axis the year-on-year change (in bp) in ROA. When calculating the ROA of banks with significant extraordinary items in the period under consideration, these items are excluded from net profit so as not to distort the analysis. Each dot represents a bank and a year. Included are the banks directly supervised by the SSM and an aggregate including all other banks. The period considered runs from 2018 to 2021 (blue dots) and 2022 (red dots). Also shown are the OLS-adjusted linear correlations.

Despite the fall in net trading income, the growth in net interest income and fee and commission income referred to above led to a year-on-year rise in gross income of around 8%. Operating expenses fell slightly, in large part thanks to a base effect due to the extraordinary operating expenses recognised in 2021 H1 (see footnote 18). Without such extraordinary expenses, operating expenses would have risen by 6% and the increase in net operating income (18%, see Annex 2) would have been smaller, around 10%. Looking ahead, the extent to which high inflation shapes wage bargaining in the banking sector and, by extension, labour costs, will have to be monitored.

While impairment losses at consolidated level held relatively stable compared with June 2021, the materialisation of the macroeconomic risks identified in this report could give rise to additional provisioning needs in the coming years. In 2021 these consolidated losses were already at a level similar to the level in the years leading up to the pandemic. In business in Spain, the decline in impairment losses with respect to June 2021 also allowed for a return to pre-pandemic levels by June 2022 (see Chart 2.11.1). At individual bank level, the increase in ordinary ROA recorded in June 2022 was not associated with a fall in impairment losses, unlike in recent years

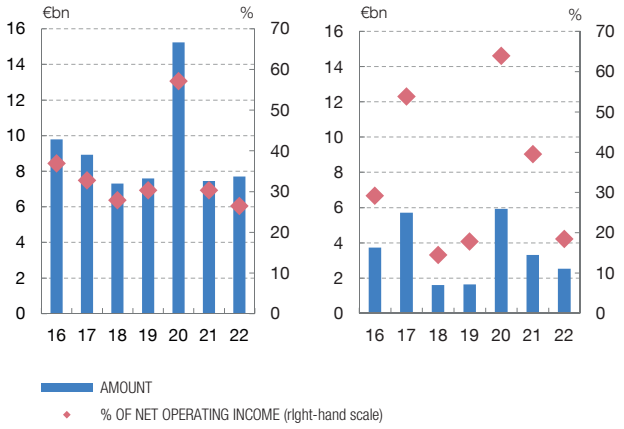
Chart 2.11

IMPAIRMENT LOSSES HELD RELATIVELY STABLE WITH RESPECT TO JUNE 2021 AND THEIR IMPACT ON BANKS' PROFITS WAS SMALLER THAN IN RECENT YEARS

At consolidated level, impairment losses held relatively stable with respect to 2021 H1 and at a level similar to June 2018 and June 2019, while impairment losses from business in Spain fell with respect to June 2021. The increase in ROA (excluding extraordinary items) recorded in June 2022 was not associated with a decline in impairment losses, unlike in recent years when impairment losses had a markedly negative impact on profitability. Estimated additional provisioning needs in the coming years are heterogeneous across banks and depend, among other factors, on the degree of credit impairment of the ICO-backed loan portfolio.

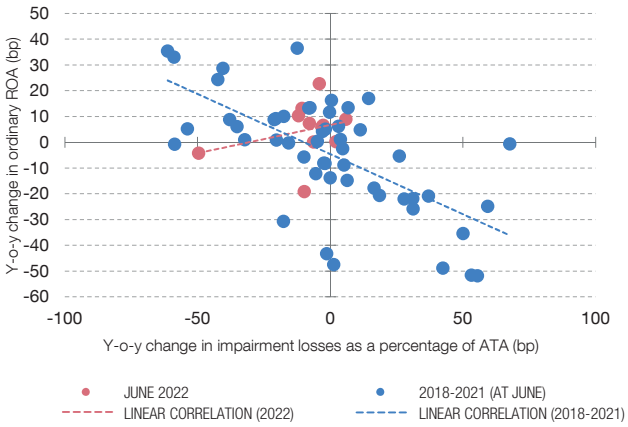
1 IMPAIRMENT LOSSES

Global consolidated data (L-H) and individual business in Spain (R-H)



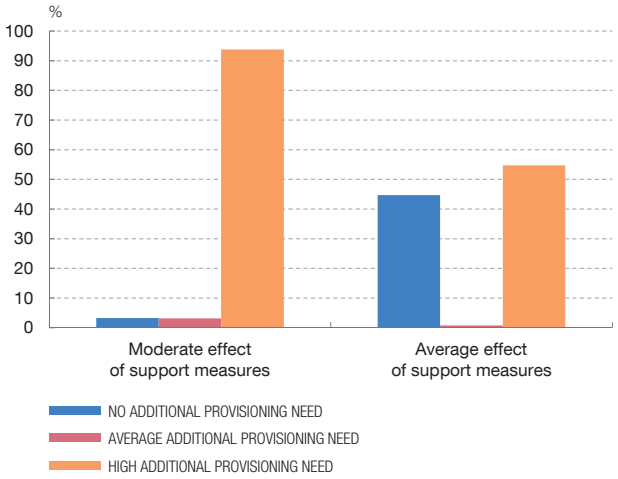
2 CORRELATION BETWEEN THE CHANGE IN IMPAIRMENT LOSSES AS A PERCENTAGE OF ATA AND THE CHANGE IN ORDINARY ROA (a)

Consolidated data

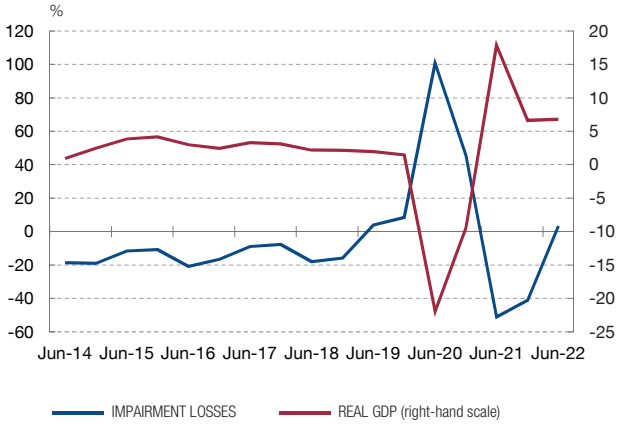


3 PROPORTION OF BANKS WITH ESTIMATED PROVISIONING NEEDS, 2022-2024

Business in Spain. Estimated using the FLESB framework (b)



4 YEAR-ON-YEAR CHANGES IN IMPAIRMENT LOSSES AND IN GDP



SOURCES: Banco de España and INE.

a The x-axis depicts the year-on-year change (in basis points) in impairment losses as a percentage of average total assets, and the y-axis depicts the year-on-year change (in basis points) in ROA. When calculating the ROA of banks with significant extraordinary items in the period under consideration, extraordinary items are excluded from the net profit so as not to distort the analysis. Each dot represents a bank and a year. Included are the banks directly supervised by the SSM and an aggregate including all other banks. The period considered runs from 2018 to 2021 (blue dots) and 2022 (red dots). Also shown are the OLS-adjusted linear correlations.

b The estimated provisioning charges for the period 2022-2024 are obtained from the baseline scenario used in the FLESB stress-testing exercise. Banks are grouped into three categories, based on the volume of estimated provisioning charges relative to the 2022 provisioning effort. The bars depict the aggregate lending of each category of bank as a percentage of total lending. The first group (no additional provisioning need) comprises banks whose 2022 provisioning effort (those provisions recognised for 2022 H1, multiplied by two to extrapolate them for the entire year) is sufficient to cover the estimated provisioning requirements for 2022-2024 under the FLESB framework. The second group (average additional provisioning needs) is formed by banks whose provisioning effort in 2022 is between 50% and 100% of the provisioning charges estimated for 2022-2024. The third group (high additional provisioning needs) consists of banks whose provisioning charges in 2022 are below 50% of the provisioning charges estimated for 2022-2024. For the estimated provisioning over the entire 2022-2024 period, two scenarios are considered in relation to the effect of the support measures (essentially the ICO guarantee scheme): moderate and average. Under the moderate scenario, the quality of credit guaranteed by the ICO is similar to that of the overall business lending portfolio. Meanwhile, under the average scenario credit quality is at a midway point between the moderate scenario and a maximum scenario where the guarantees are used in full to absorb the poorest quality credit (see Box 2.2).

when there was a markedly negative correlation between rising impairment losses and changes in profitability (see Chart 2.11.2). The prospect of less favourable economic conditions means that some banks will have to record additional provisions in the coming years (see Chart 2.11.3). Moreover, the potential materialisation of the macro-financial risks identified in this report could notably increase the amount of such additional provisions (see Box 2.2). In particular, this would be the case in the event that such additional impairment mainly affected non-ICO-backed exposures. The scale of this additional effort is notably uneven across banks. Impairment losses behave in a markedly cyclical fashion (see Chart 2.11.4), so future developments will largely rest on the macroeconomic situation in the coming quarters.

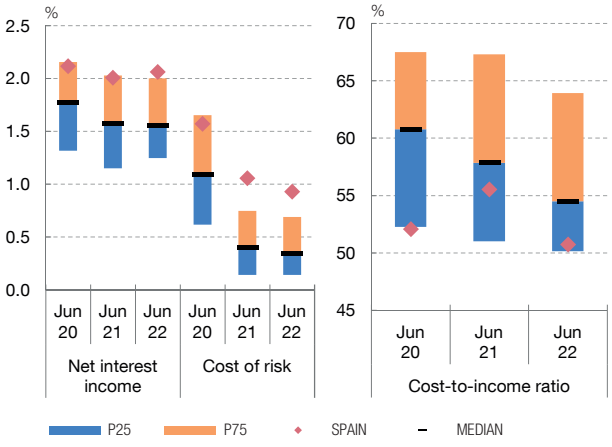
Another key factor as regards the future profitability of the Spanish banking sector is the draft legislative proposal for a temporary levy that would shrink the sector's profits and hinder its capacity for organic capital generation in the coming years. The proposed measure[22] is expected to run from 2023 to 2024

Chart 2.12

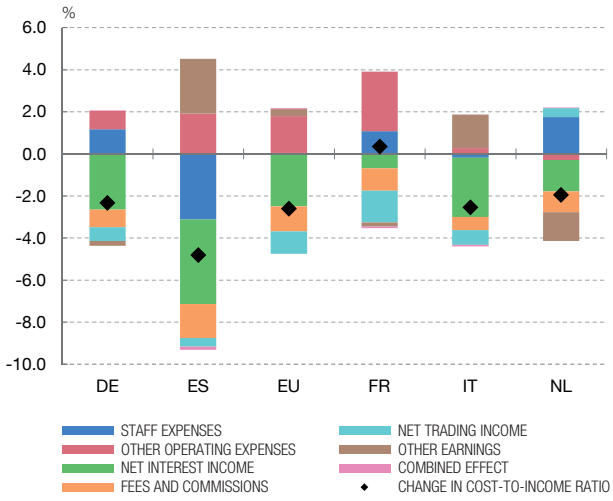
VARIOUS COMPONENTS OF BANK PROFITABILITY PERFORMED POSITIVELY TO JUNE 2022 AT THE EUROPEAN LEVEL; THE SPANISH BANKS OUTPERFORMED THE AVERAGE

Both the net interest income (on interest-earning assets) of the Spanish banking system and its cost of risk are among the highest in Europe. Its cost-to-income ratio is among the lowest (best) in Europe and has improved more year-on-year than in the case of the other main European countries, thanks to the increases in net interest income and fee and commission income and the base effect of the extraordinary expenses recorded in 2021 H1.

1 MAIN PROFITABILITY VARIABLES: A EUROPEAN COMPARISON (a)
Consolidated data



2 BREAKDOWN OF CHANGE IN COST-TO-INCOME RATIO: A EUROPEAN COMPARISON, JUN-22 vs JUN-21 (b)
Consolidated data



SOURCE: EBA.

a Percentiles calculated drawing on the aggregate financial ratios published in the EBA's Risk Dashboard for each EU banking system. Net interest income is defined as interest income minus interest expenses (on interest-earning assets). Cost of risk is defined as impairment loss charges divided by gross lending. The cost-to-income ratio is defined as operating expenses divided by gross income, hence lower values indicate greater efficiency.

b Note that negative variations in the cost-to-income ratio imply improvements. Positive (negative) contributions to the change in the components of the numerator indicate that they have increased (decreased) in the last year. Positive (negative) contributions to the change in the components of the denominator indicate that they have decreased (increased) in the last year. The combined effect is a residual calculated as the difference between the total change in the cost-to-income ratio and the sum of all the individual contributions.

22 See Legislative Proposal 122/000247 to establish temporary levies on energy and on credit institutions and specialised lending institutions.

and would apply to banks exceeding a minimum interest income and fee and commission income threshold in 2019 set at €800 million. The tax rate would be 4.8% and the base would be the 2022-2023 net interest income and net fee and commission income taxable in Spain. Box 2.3 contains a more detailed description of this measure and of the opinion issued by the ECB on the implications of the levy.

At the European level, the various components of bank profitability also performed positively up to June 2022, with Spanish banks outperforming the average. In June 2022, the net interest income (on interest-earning assets) of the Spanish banking system and the cost of risk were both among the highest Europe-wide (see Chart 2.12.1). In the last year Spanish banks performed well in both metrics. The cost-to-income ratio was also among the lowest (best), and has improved faster year-on-year than in the main European countries (see Chart 2.12.2). This improvement is due to the above increases in net interest income and fee and commission income, and to the base effect of the extraordinary expenses recorded in 2021 H1.

Solvency

In June 2022, the common equity Tier 1 (CET1) ratio of Spanish banks was lower than in the same period a year earlier, mainly owing to the increase in risk-weighted assets (RWAs). Following the year-on-year increases recorded in June 2020 (36 bp) and 2021 (83 bp), the CET1 ratio declined by 52 bp in June 2022 (see Chart 2.13.1). This fall was prompted by the 3.3% year-on-year rise in the ratio's denominator (RWAs), while the numerator (CET1) fell slightly (-0.7%). The increase in RWAs was widespread among banks, but not all reduced their CET1 (see Chart 2.13.2). Tier 1 capital and total capital ratios followed the same trend as the CET1 ratio, posting falls of 62 bp and 58 bp year-on-year, respectively. Box 2.2 sets out the results of the stress tests conducted by the Banco de España, which estimate the impact on the CET1 ratio of a potentially severe deterioration of the macroeconomic outlook which would significantly distance it from the core expectations.

The Spanish banking system's resources to absorb expected and unexpected losses diminished in the 12 months to June with respect to asset size. Chart 2.14.1 shows the availability of loss-absorbing resources estimated as the sum of the stock of provisions (for the expected component) and CET1 (for the unexpected component), measured in terms of total assets.[23] The decrease in available loss-absorbing resources over the year, following the increases observed between June

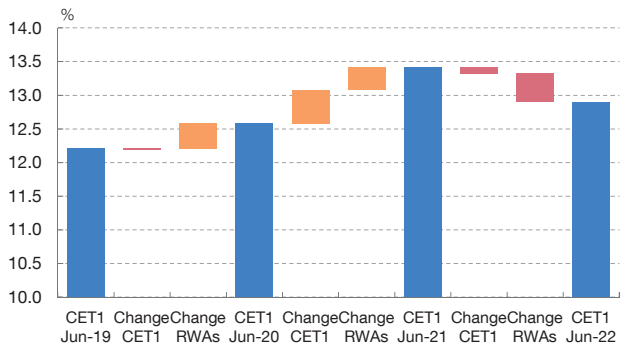
23 Given that the total assets on the balance sheet are net of credit impairment provisions, the total assets used as the denominator to express the availability of loss-absorbing resources (whose numerator includes the credit impairment provisions) in relative terms include the credit impairment provisions of all debt instruments. Using total assets as the denominator for this metric yields a conservative calculation, with a rationale comparable to that of the leverage ratio, since this variable does not distinguish between the different risk levels of these assets (unlike risk-weighted assets which do discriminate between these levels).

Chart 2.13

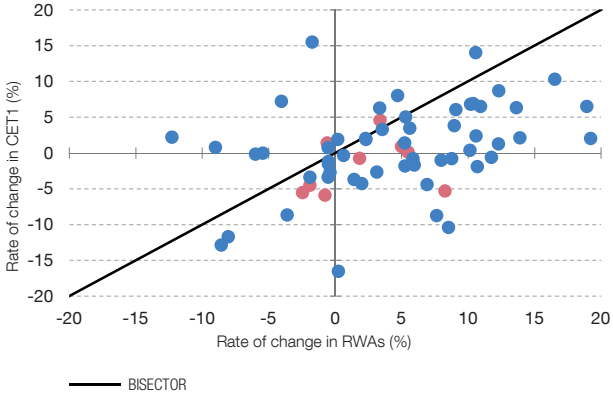
THE INCREASE IN RISK-WEIGHTED ASSETS RESULTED IN A FALL IN THE CET1 RATIO IN JUNE 2022

Following the year-on-year increases recorded in June 2020 (36 bp) and June 2021 (83 bp), the CET1 ratio of the Spanish banking sector declined (-52 bp) in June 2022. This fall was mainly due to the rise in RWAs (3.3%), which was widespread across banks, while CET1 fell slightly (–0.7%), with the number of banks at which CET1 increased similar to that at which it declined.

1 BREAKDOWN OF CHANGE IN THE CET1 RATIO BETWEEN JUNE 2019 AND JUNE 2022. CHANGE IN NUMERATOR AND DENOMINATOR
Consolidated data



2 RATE OF CHANGE IN CET1 AND IN RWAs BETWEEN JUNE 2022 AND JUNE 2021 (a)
Consolidated data



SOURCE: Banco de España.

a The red dots represent banks subject to direct SSM supervision. The dots above the bisector denote increases (decreases) in CET1 over the last year greater (smaller) than the increases (decreases) in RWAs and, therefore, relate to increases in the CET1 ratio between June 2021 and June 2022. The reverse applies for the dots below the bisector.

2020 and June 2021, is attributable to the three components of this ratio. First, CET1 has fallen slightly over the year, as described above. Second, provisions also declined. The stock of credit impairment provisions fell by 6.1% year-on-year while other provisions did so by 25% (this decline was mostly accounted for by provisions for pensions). Third, total assets increased by 7.8%, to a greater extent than RWAs, leading to a lower RWA density and, consequently, a lower volume of unexpected losses as a proportion of total assets.

The entry into force of binding regulatory requirements in 2022, along with the increase in RWAs and the slight decline in the volume of CET1, reduced the voluntary buffer in the 12 months to June. The voluntary buffer (estimated as the volume of CET1 held by institutions above the regulatory minimum), which had increased between June 2019 and June 2021,[24] shrank in the last 12 months (see Chart 2.14.1). The entry into force of binding MREL requirements in 2022,[25] added to the factors mentioned above (slight decline in CET1 and increase in RWAs), reduced the voluntary

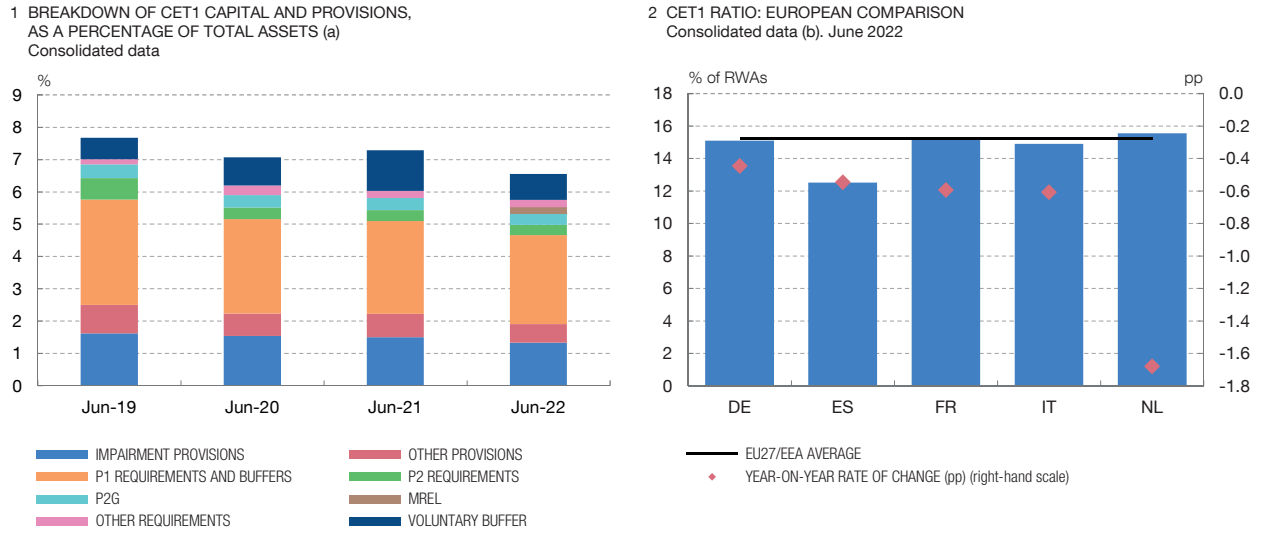
24 This increase between June 2019 and June 2020 was mainly due to the regulatory change (following the outbreak of COVID-19) which allowed part of Pillar 2 requirements to be covered with additional Tier 1 capital and Tier 2 capital, instead of with CET1, and to the decrease in RWAs (which reduced the related requirements); while the increase between June 2020 and June 2021 was not only due to the decline in RWAs but also to the increase in CET1.

25 This analysis considers MREL requirements only since 2022, when they became binding for ten institutions. Before 2022 three institutions were subject to binding MREL, albeit only for a few months in 2020 in two cases.

Chart 2.14

THE SPANISH BANKING SYSTEM'S LOSS-ABSORBING RESOURCES DIMINISHED IN THE FIRST SIX MONTHS OF THE YEAR AS A PROPORTION OF TOTAL ASSETS. THE DIFFERENCE IN THE CET1 RATIO VIS-À-VIS THE EUROPEAN AVERAGE REMAINED UNCHANGED

The entry into force of MREL requirements in 2022, along with the increase in RWAs and the slight decline in CET1, explain the year-onyear decrease in the voluntary buffer in June 2022. In addition, both credit impairment provisions and other provisions declined with respect to June 2021, reflecting the lower expected losses up to that date. All this against a backdrop of asset growth and diminished RWA density. The CET1 ratio of Spanish banks remains below that of banks from the other main European countries and the EU average, and this difference persisted over the year, owing to similar declines in the ratio in the main European countries.



SOURCES: Banco de España and EBA.

a In this chart the denominator is calculated as the sum of total assets on the balance sheet and the credit impairment provisions of all debt instruments, given that the total assets on the balance sheet are net of these provisions. "Other provisions" include provisions for pensions and other long-term employee benefits, provisions for legal issues, provisions for commitments and guarantees given, and other provisions. "P1 requirements and buffers" include Pillar 1 requirements and all buffers (capital conservation, countercyclical and systemic). "P2G" includes P2G capital guidance. "MREL" includes the MREL requirements which came into force in 2022. "Other requirements" includes the CET1 required to meet Tier 1 and Tier 2 capital requirements when additional capital is not sufficient to do so, and the leverage ratio requirements, which entered into force in 2021. Lastly, the "Voluntary buffer" is the amount of CET1 voluntarily held by banks above the regulatory minimum.

b Data for the samples of the main banks in each country, in line with reporting to the EBA's Risk Dashboard.

buffer in June 2022 by close to €8.5 billion (representing 0.6% of CET1 at that date or, alternatively, 0.2% of total assets as defined in Chart 2.14.1 at the same date).

The CET1 ratio of the Spanish banking sector, on June 2022 data, remains lower than the European average. As shown in Chart 2.14.2, the differences observed in the CET1 ratio of Spanish banks vis-à-vis banks from the main European countries and the EU average persisted in the 12 months to June 2022, owing to similar declines in the ratios in the main European countries over this period.

2.1.3 Deposit institutions' operational risks

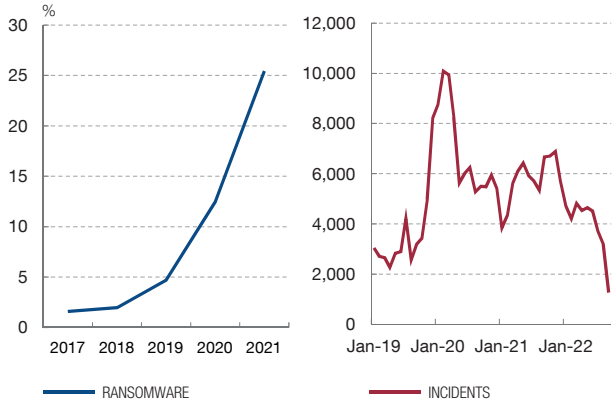
Cyber risks are a cause for concern for banks, although the cost impact remains contained for now. Cyber risks ranked high among the issues raised by

Chart 2.15

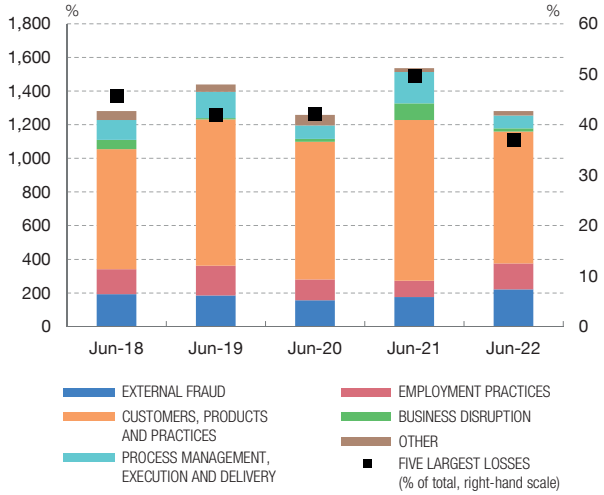
FOR NOW, OPERATIONAL RISK LOSSES HAVE NOT BEEN SIGNIFICANTLY IMPACTED BY THE MATERIALISATION OF CYBER RISKS, WHICH KEEP THE BANKING SECTOR ON ALERT

Spanish banks' operational risk conformed to the usual patterns, with a predominance of provisions for litigation and compensation in proceedings relating to services provided to customers. The alarm generated by the proliferation of cyber attacks has not yet materialised in any significant cyber incidents.

1 RATE OF GROWTH IN RANSOMWARE INCIDENTS WORLDWIDE (a) AND NUMBER OF CYBER ATTACKS ON STRATEGIC AND PUBLIC-SECTOR SYSTEMS IN SPAIN



2 NET OPERATIONAL RISK LOSSES
Consolidated data. H1



SOURCES: *Verizon Data Breach Investigation Report 2022* and CCN-CERT (Spain).

a Ransomware attacks are all those primarily designed for extortion purposes.

banks in the EBA's spring consultation on future operational risks. These responses revealed a concern that has been ever-present in recent years owing to the widespread alarm prompted by the countless cyber attacks occurring across economic sectors worldwide. A partial but very revealing indicator of the rise in threats is the global surge in ransomware incidents, i.e. attacks aimed at extortion (see Chart 2.15.1, left-hand panel). The geopolitics behind many of these attacks, combined with the escalation of geopolitical tensions at the start of the year, presaged a sharp rise in high-profile attacks on strategic sectors, including the financial sector. However, the rise in threats has yet to materialise, at least in the case of Spain[26] (see Chart 2.15.1, right-hand panel).

Operational risk losses at Spanish banks continue to focus on the causes observed in previous years. The events triggering the operational risk losses reported by Spanish banks in 2022 H1 conformed to the usual pattern (see Chart 2.15.2). The most significant contributions continue to be failures to comply with fiduciary duties to retail customers with judicial or similar consequences (61%), and external fraud incidents (17%). Deposit institutions have increased their provisions for future procedural issues and litigation concerning outstanding taxes

26 Within the crypto ecosystem, a relatively higher number of attacks has been observed. Chainalysis reported that in the first half of October 2022 alone, US$ 718 million were stolen from DeFi protocols in 11 crypto hacks.

by 4.9% year-on-year. Such litigation includes complaints relating to the mortgage loan reference index, which have declined, while other complaints, including those relating to mortgage loan arrangement costs, floor clauses, multi-currency loans or revolving credit claims, have held at similar levels.

2.2 Non-banking financial sector and systemic interconnections

2.2.1 Non-banking financial sector

Specialised lending institutions

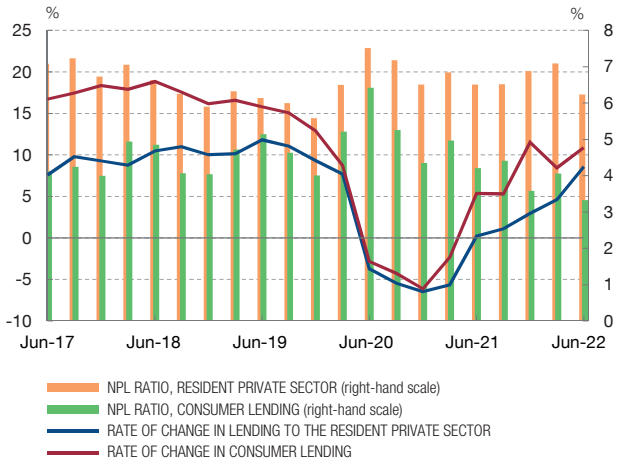
The stock of loans extended by specialised lending institutions (SLIs) to the resident private sector grew in the six months to June, while their NPL ratios declined and their profits improved. The outstanding stock of credit extended by SLIs to the resident private sector rose by 8.6% year-on-year in June 2022, representing a

Chart 2.16

THE LOAN PORTFOLIO OF SPECIALISED LENDING INSTITUTIONS, PARTICULARLY IN THE CONSUMER SEGMENT, GREW IN THE 12 MONTHS TO JUNE 2022, WHILE THEIR NPL RATIOS DECLINED (a)

The outstanding stock of loans extended by specialised lending institutions (SLIs) rose year-on-year to June 2022, especially in the consumer segment, which has a large weight in SLIs' portfolios (41.3% at June 2022). The NPL ratio declined over the same period. The distribution of SLIs by rates of change in lending to the resident private sector and consumer lending shifted to the right, showing that the increase in lending was widespread among SLIs.

1 RATE OF CHANGE IN LENDING AND NPL RATIOS AT SPECIALISED LENDING INSTITUTIONS (b)



2 DISTRIBUTION OF RATE OF CHANGE IN LENDING TO THE RESIDENT PRIVATE SECTOR (L-H PANEL) AND OF CONSUMER LENDING (R-H PANEL) (c)

SOURCE: Banco de España.

a The analysis was performed with the group of SLIs existing in June 2022 and thus excluded the effects of corporate transactions carried out in recent years.
b The total NPL ratio is higher than the NPL ratio for the consumer segment because of one large SLI specialising in high-risk mortgage loans.
c The charts show the density function of the year-on-year rates of change in lending, weighted by total loans in each category. The density function is proxied by means of a kernel estimator, which enables non-parametric estimation and provides a continuous, smoothed graphic representation of that function.
d The 2019-2021 reference is the distribution of the year-on-year rates of change in June 2019, June 2020 and June 2021, considered jointly.

substantial increase on the figure recorded 12 months earlier (0.2%) (see Chart 2.16.1). The consumer credit portfolio, which has a significant weight in these institutions (41.3% in June 2022), grew by 10.8% year-on-year, 5.5 pp more than in June 2021. In the 12 months to June 2022, NPL ratios fell to 6.2% in the case of total lending and 3.3% in consumer credit. Profits after tax at these institutions taken as a whole rose by 32.1% in the first six months of 2022, compared with the same period a year earlier, although this improvement was associated with idiosyncratic factors affecting some institutions.

The distribution among SLIs of the rates of change in credit has shifted to the right, compared with the period 2019-2021 (see Chart 2.16.3). The general shift towards higher growth rates was observed both in overall lending and, specifically, in consumer loans.

Insurance companies

The volume of income from direct insurance premiums increased by 4.4% in 2022 H1, compared with the same period a year earlier. Non-life insurance premiums grew by 5.4% and life premiums by 3%, with the former accounting for 63% of total income. Non-life premiums posted strong growth in a number of categories: health insurance rose by 7.3%, multi-risk insurance by 5.6% and car insurance by 2.3%. The recent growth in income must be set against the context of the extraordinary decline in premiums in 2020 as a result of the pandemic. Indeed, premium income remains 2.2% below the 2019 pre-pandemic figure, partly owing to the incomplete recovery of the car industry, linked to the scant growth of the road vehicle stock. The current growth in the demand for insurance could slow in the coming months in the face of a possible economic downturn.

The profitability and solvency of this sector improved somewhat in 2022 H1, compared with the same period a year earlier. ROE stood at 6.4% in June 2022 and the solvency ratio (SCR) at 241.9%, having increased by 0.2 pp and 1.1 pp year-on-year, respectively.

Pension funds

Contributions to pension funds and their total assets and returns have all declined since mid-2021. Gross contributions to pension funds fell by more than 12% in the 12 months to June 2022, largely owing to the lower limit on tax deductions for contributions to individual pension schemes.[27] Total pension scheme assets had

27 The maximum tax deductible amount has dropped from €8,000 a year in 2020 to €2,000 in 2021. In 2022 it will amount to €1,500 a year, as stipulated in Article 59(2) of the State Budget for 2022, amending Article 52(1) of Law 35/2006 of 28 November 2006.

also declined, by 5.6%, in June 2022, compared with the same month a year earlier. In addition, pension funds' annual average returns fell significantly from 11% in June 2021 to -6% in June 2022 as a result of financial market volatility, fuelled by the war in Ukraine and the heightened inflationary pressures. Nevertheless, despite the 68 bp decline, long-term returns (25 years) remained in positive territory, at 2.7% in June 2022.

Investment funds

Since early 2022, investment funds in the euro area have seen a decline in their net capital inflows, linked to financial market tensions (see Chart 2.17.1). Noteworthy were the net capital outflows from fixed-income funds, which may have been harder hit by the expectations of a greater-than-anticipated tightening of global monetary policy in that period. However, these funds have stabilised since mid-2022.

Mixed and equity funds domiciled in Spain performed comparably to their euro area counterparts, while capital inflows into fixed-income funds rose. The recovery in flows in Spain was led by funds investing in long-term bonds, which have a higher expected yield at maturity than other securities, although with greater market risk since they are more sensitive to changes in interest rates. In any event, the average maturity of the fixed-income portfolio of Spanish funds is shorter than that of other European funds (see Chart 2.17.2), reducing their average sensitivity to interest rate rises.

The higher-risk fixed income securities holdings of investment funds in the euro area as a whole remained practically unchanged, while those of funds domiciled in Spain increased. For investment funds in the euro area, the percentage of holdings with a credit rating bordering on or below investment grade accounted for around 35% of the fixed-income portfolio (close to 13% of the total securities portfolio[28]) at the end of 2022 Q2, representing an increase of around 2 pp when compared with 2021 Q2 (see Chart 2.17.2). Spanish investment funds have a higher proportion of fixed-income securities with this rating, which account for more than 45% of the fixed-income portfolio (20% of the total securities portfolio). In turn, the weight of high-yield securities (fixed-income with a sub-investment grade credit rating) increased, possibly due to a change in the ratings of securities already in the portfolios, rather than to a change in the policies for purchasing securities. The liquidity held in cash and deposits remained at levels similar to those of last year, as did the average maturity of fixed-income portfolios, with only euro area funds posting a slight decrease. In Spain, these funds have higher cash and deposit holdings than

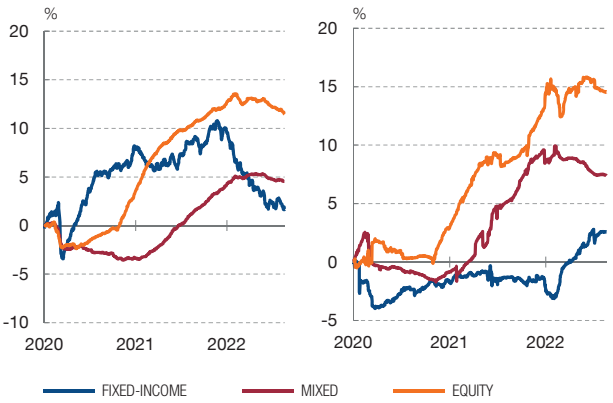
28 According to information from the Securities Holdings Statistics by Sector database (SHSS), the securities portfolio of euro area investment funds had a value of around €12,165 billion at the end of 2022 Q2. The portfolio of funds domiciled in Spain amounted to approximately €277 billion at the same date.

Chart 2.17

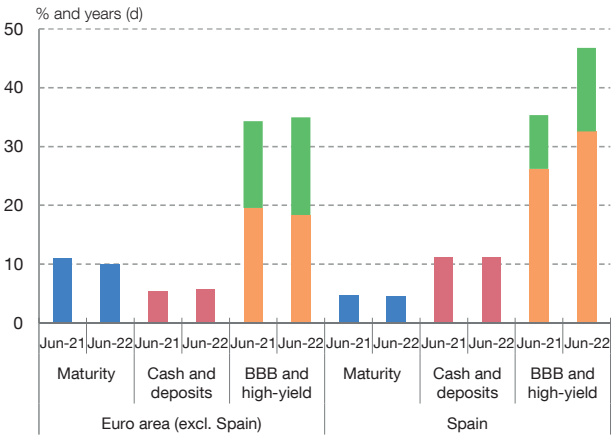
CAPITAL INFLOWS INTO SPANISH FIXED-INCOME FUNDS INCREASED IN THE FIRST SIX MONTHS OF THE YEAR, AS DID THE WEIGHT OF HOLDINGS WITH LOWER CREDIT QUALITY, IN CONTRAST TO WHAT WAS OBSERVED FOR THIS SEGMENT IN THE EURO AREA AS A WHOLE

Since early 2022, capital inflows into European mixed and equity funds have lost momentum, while there have been net outflows from fixed-income funds. These performed differently in Spain, recording net capital inflows. The average maturity of investment funds' fixed-income portfolios decreased slightly in Europe and in Spain. In Spain, the weight of holdings with a BBB or lower rating rose by approximately 10 pp compared with June 2021.

1 INVESTMENT FUND FLOWS IN THE EURO AREA (EXCL. SPAIN) (L-H PANEL) AND IN SPAIN (R-H PANEL) (a) (b)



2 LIQUIDITY AND FIXED-INCOME HOLDINGS (MATURITY, CREDIT RATING). EURO AREA (EXCL SPAIN) AND SPAIN (c) (d)



SOURCES: Banco de España, ECB, Refinitiv and SHSS.

a Cumulative change in investment fund net capital inflows and outflows, as a percentage of the total net assets of the funds of each country or region on 15 January 2020, drawing on a representative sample, prepared by Refinitiv, of funds domiciled in euro area countries. The data for Spain in the right-hand panel refer to funds domiciled in Spain included in this sample. The number of funds reporting flows daily in 2022 and included in the sample in that period is 3,319 and 84,333, respectively, for Spain and for the euro area as a whole. The data for days with atypical flow values are omitted. Data up to early September 2022.

b The left-hand panel of Chart 2.17.1 includes information on the funds domiciled in Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain. The fixed-income fund category also includes vehicles that invest in the money market.

c This shows the average maturity of the total fixed-income portfolio, calculated as the weighted average of the maturities of each holding in the portfolio at its market value. The term "high-yield" refers to sub-investment grade credit ratings (from BBB+ to BBB—). The orange and green bars indicate the weight of BBB and high-yield holdings, respectively.

d Maturity is measured in years, the level of cash and deposits as a percentage of total financial assets, and the percentage of BBB and high-yield holdings as a percentage of the fixed-income portfolio.

those of the euro area as a whole. This mitigates the higher risk profile mentioned earlier, owing to the lower credit ratings (higher credit risk) of the holdings, but it also means that their average returns are lower.

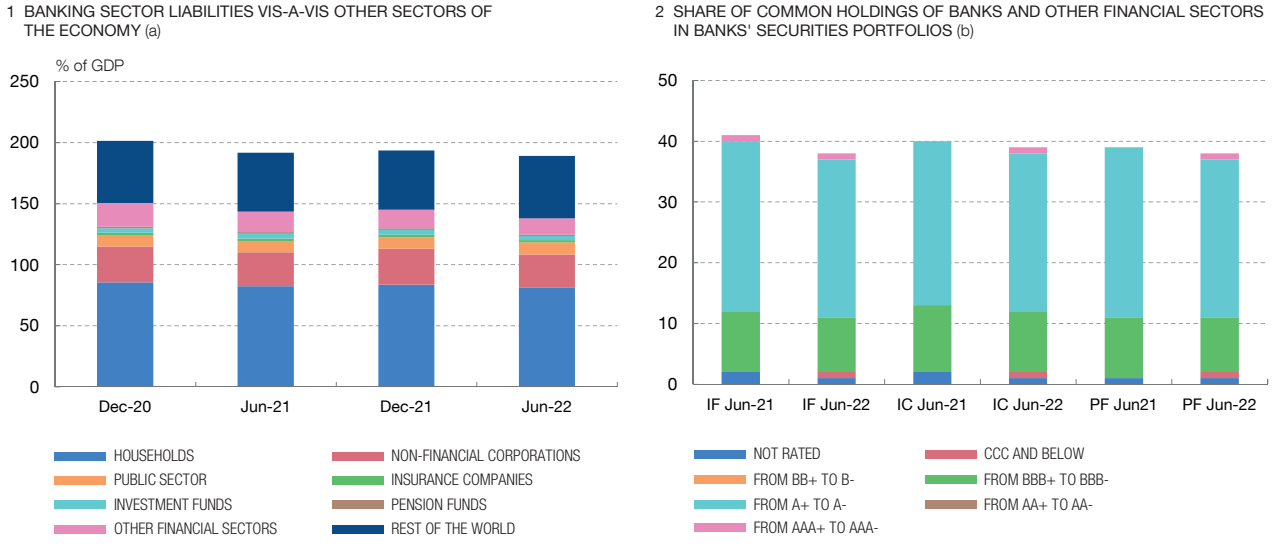
2.2.2 Systemic interconnections

As a percentage of GDP, the Spanish banking system's liabilities vis-à-vis other resident sectors have declined in recent quarters and its liabilities to the rest of the world have increased. The value of overall liabilities fell from around 193% of GDP in December 2021 to 189% in June 2022 (see Chart 2.18.1). As a percentage of GDP, liabilities vis-à-vis households declined, from 84% to 81%, as did liabilities to non-bank financial sectors (insurance companies, investment funds, pension funds, etc.), from 22% to 20%, and liabilities vis-à-vis NFCs, from 29% to 27%. The proportion of liabilities vis-à-vis the rest of the world rose from 49% to 51%.

Chart 2.18

THE BANKING SECTOR'S LIABILITIES VIS-À-VIS RESIDENT SECTORS DECLINED, WHILE THOSE VIS-À-VIS THE REST OF THE WORLD INCREASED. COMMON HOLDINGS WITH OTHER FINANCIAL SECTORS HELD STEADY

The banking sector's liabilities vis-à-vis resident sectors declined in the first six months of the year by around 7 pp of GDP, In the same period, the liabilities vis-à-vis the rest of the world increased by 2 pp of GDP. The share in total securities holdings and the distribution of credit ratings of common holdings with other financial sectors remained relatively unchanged.



SOURCES: Banco de España, Refinitiv and SHSS.

a The "other financial sectors" category includes all the Spanish financial sectors not disaggregated in the chart. Individual data.
b The banking sector's portfolio includes securities also held by other sectors in their portfolios. The bars shows the common holdings between banks and other Spanish financial sectors. For example, the first bar shows that the common holdings between banks and investment funds accounted for around 40% of the banking sector's total securities portfolio in June 2021; of these, approximately 10% have ratings bordering on investment grade (from BBB+ to BBB–). The calculations are based on the market value of the holdings reported by banks (or, where applicable, their fair value). The latest available rating at each date is used, standardised according to the S&P credit rating scale.

The banking sector's common holdings of securities vis-à-vis other resident financial sectors declined slightly in June 2022, compared with June 2021. Moreover, the distribution of the credit ratings of these holdings remained relatively unchanged. The weight of these common holdings (securities in the portfolios of both banks and other financial sectors) fell slightly in 2022 Q2 compared with 2021 Q2, with the largest decline, of around 3 pp, in banks and investment funds (see Chart 2.18.2). Currently, the banking sector's common holdings vis-à-vis other financial sectors represent close to 40% of banks' total securities portfolio.[29] The distribution of the credit ratings of these holdings remained relatively unchanged, with a predominance of assets with a rating of A+ to A- (between 26% and 28%). Common holdings bordering on investment grade accounted for around 10% of the securities portfolio. Albeit small, this latter group of exposures is more vulnerable to the economic cycle and could trigger fire sales if their credit rating is downgraded.

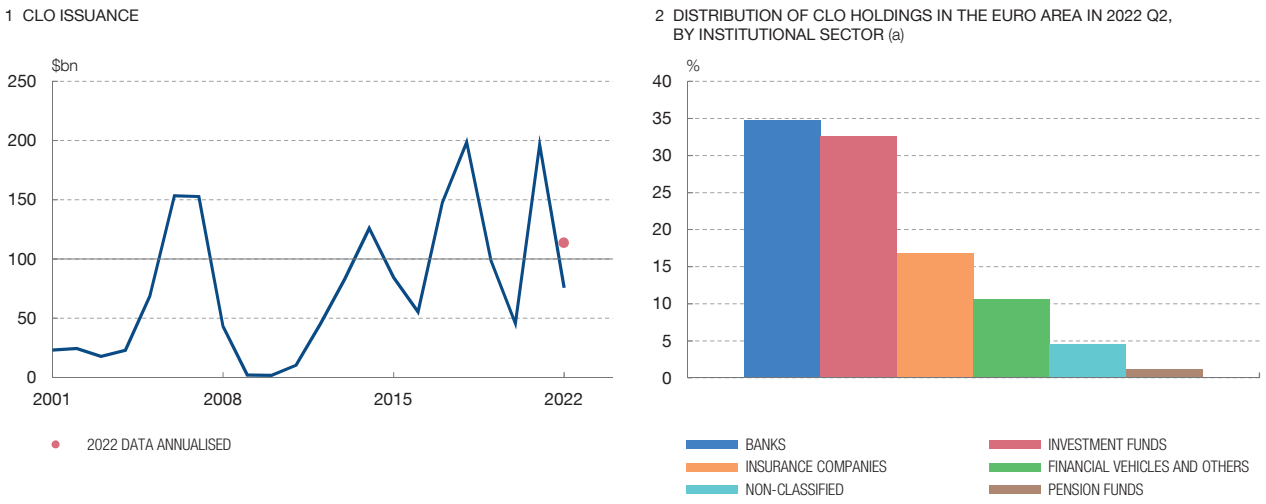
29 The market value of the Spanish banking sector's securities portfolio amounted to some €640 billion at end-June 2022. Approximately 40% of this volume was invested in securities also held in other sectors' portfolios.

Interconnections created by derivatives are a significant channel for transmission of risk, not only between financial institutions but also with other economic sectors.[30] Derivatives could create contagion channels between NFCs and the financial system, as has been seen in recent months, against a backdrop of soaring energy – especially gas – prices. This is because energy derivatives trading through central counterparty clearing houses (CCPs) requires that counterparties hold a certain level of collateral, which varies according to the moves in price and the price volatility of the underlying energy product.[31] As gas prices rise, counterparties holding short positions in these contracts need to post more collateral with clearing houses. Additionally, if price volatility increases, both parties to the contract could be required to post more collateral. Recently, several energy corporations in central and northern Europe experienced liquidity difficulties meeting collateral calls on their short derivatives positions. This led their respective governments to provide them with liquidity lines to advance the collateral, given that the banks with which these corporations operated had reached their internal individual risk tolerance limits and the interest rates required to continue to provide funding were deemed unacceptable by the energy corporations. The recent moderation in energy prices will reduce the

Chart 2.19

THE NON-BANKING FINANCIAL SECTOR HAS A HIGH DEGREE OF EXPOSURE TO CLOs

Recent years have seen strong CLO issuance; the bulk of the identified holdings are on the balance sheets of non-bank financial intermediaries, which could face losses in the event of a deterioration in credit quality in the non-corporate financial sector.



SOURCES: ESMA (SFTDS project), ECB, Banco de España, Refinitiv and SHSS.

a Breakdown of CLO holders. Sample of the CLOs on which SHSS has data on holders, which according to Refinitiv Eikon amount to 15% of all active CLOs. There are no significant differences, in terms of instrument size, currency or country of issuance, between the sample and the CLOs on which there is no information.

30 For more details, see section 2.2.2 of the Spring 2022 FSR.

31 It is difficult to assess OTC contracts not settled through CCPs, owing to the opacity of these contracts.

need for further potential measures, but the uncertain environment requires that these dynamics be regularly monitored.

Euro area banks' direct exposure to the recent problems faced by energy corporations is limited, but risks of an impact via indirect channels remain. Some banks hold loans extended to energy corporations and securities issued by them on their balance sheets, or act as counterparties for them in derivatives contracts. According to the latest data available in the ECB's Statistical Data Warehouse, the euro area banking sector's exposure to energy sector corporations through loans and advances accounted for some 1.3% of total assets (1% for Spain) at end-2021. Fixed-income exposures are also low, both for Spanish banks and European banks overall, but the stress in the energy sector could pass through to other sectors and could ultimately affect the value of a broader set of holdings.

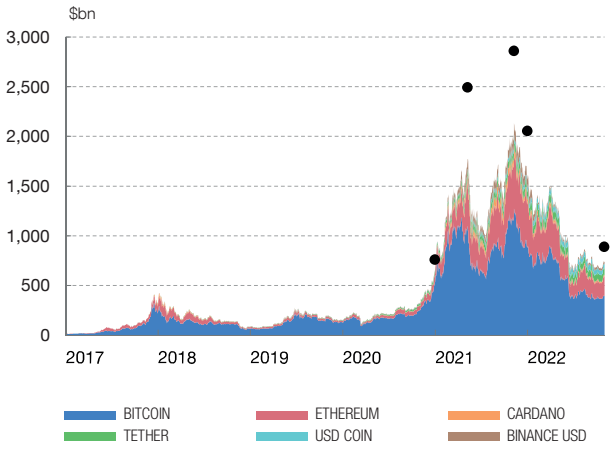
Collateralised loan obligation (CLO) issuance has been high in recent years; non-bank financial intermediaries are particularly exposed to this segment. Issuance of CLOs – market-traded instruments whose collateral are corporate (sometimes high-yield) loans – has been very high since 2017, reaching €760 billion

Chart 2.20

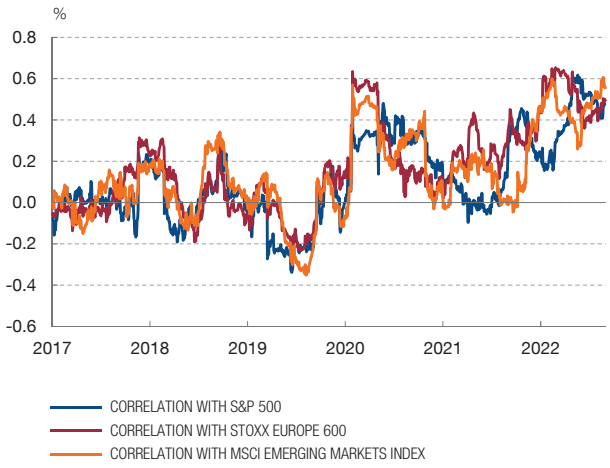
THE MARKET VALUE OF CRYPTO-ASSETS HAS FALLEN SHARPLY IN 2022, WITH A HIGH CORRELATION BETWEEN THESE INSTRUMENTS AND EQUITIES

The market prices of unbacked crypto-assets, such as bitcoin, have been highly volatile and have seen sharp corrections. Backed crypto-assets have been steadier, albeit with some exceptions. This poor crypto-asset performance has coincided with price falls in traditional risk assets such as equities. In general, there is a high correlation between crypto-asset and stock market returns.

1 MARKET VALUE OF LARGEST CRYPTO-ASSETS (a)



2 CORRELATION BETWEEN DAILY RETURNS ON A CRYPTO-ASSET INDEX AND ON EQUITY MARKET INDICES - EUROPE, UNITED STATES AND EMERGING MARKETS (b)



SOURCES: FSB, Refinitiv, CoinMarketCap and MVIS Investable Indices.

a Bitcoin, Ethereum and Cardano are unbacked crypto-assets, while all the others depicted in the chart are stablecoins. The dots denote the market value of all crypto-assets, not only those included in the chart.
b The crypto-asset index used to calculate the correlations is the MVIS CryptoCompare Digital Assets 100 Index, made up of the 100 largest (backed and unbacked) crypto-assets by market value.

in cumulative terms (see Chart 2.19.1). CLO issuance has recovered after falling sharply during the pandemic, overtaking at June 2022 the 2020 H1 level. Strong CLO issuance means that credit risk associated with loans to the corporate sector spreads from the lending banks to other financial intermediaries. Indeed, analysis of holdings of CLOs, identified in the SHSS statistics, shows that a large portion of these holdings are on the balance sheets of non-bank financial intermediaries, while the banking sector's holdings account for just 35% of the total at June 2022 (see Chart 2.19.2). Among non-bank financial intermediaries, the holdings of investment funds, which own more than 30% by volume of the CLOs analysed, stand out.

At the start of the year the market prices of the main crypto-assets fell sharply. In the opening months of 2022, the market prices of the main unbacked crypto-currencies, such as bitcoin, tumbled (see Chart 2.20.1). Stress was also observed in some backed crypto-assets (the so-called stablecoins), but it was not widespread, which suggests that investors discriminated between them, assessing the specific risks of each. These developments coincided with episodes of stress in traditional financial assets, such as equities. In general, there is a high correlation between the market prices of crypto-assets and of all other assets. This calls into question the diversification in terms of risk that an investor can achieve by exposure to these assets (see Chart 2.20.2).

Box 2.1

CREDIT QUALITY OF EXPOSURES SUBJECT TO MATURITY EXTENSION AND GRACE PERIOD EXPIRY UNDER THE PUBLIC GUARANTEE PROGRAMME FOR LOANS TO NON-FINANCIAL CORPORATIONS

The public guarantee programme for loans to non-financial corporations was introduced by the Official Credit Institute (ICO) in response to the outbreak of the COVID-19 pandemic. The programme aims to mitigate the potential impact of the pandemic on the corporate sector, linked to the restrictions on activity imposed during different phases of the health crisis. Given the uncertainty over the duration and implications of the pandemic, these loans were originated at a relatively long maturity[1] and with the option to request an interest-only grace period, thus shoring up firms' liquidity during the particularly challenging early stages of the health crisis. Subsequently, in some cases the conditions of those guarantees were eased further, extending the maturity and the grace period, given the persistence of certain negative effects of the pandemic in 2021 and the various adverse geopolitical and economic developments that have arisen since.[2]

This greater flexibility in the State guarantee programmes was introduced through a number of regulations.[3] A portion of these relief measures served to reduce firms' debt burden at a time when other support measures, such as fiscal moratoria and furlough schemes, were coming to an end.[4]

This box aims to study the credit risk of firms that have benefited from a maturity extension or a grace period, based on the data available in the Banco de España's Central Credit Register. This is an important exercise at the current juncture, given that these firms might have resorted to such measures owing to a weakened financial position and may therefore have a higher latent credit risk.

ICO-backed loans with grace periods still in force in July 2022 accounted for just 5.6% of the drawn outstanding amount in December 2021, while those whose grace period had expired in the first seven months of 2022 accounted for 32.2% (see Chart 1, left-hand panel). Thus, the latter group represents the bulk of the loans that have benefited from a grace period at any time since 2020, for whom 2022 H2 represents a crucial period in terms of their credit quality. This owes to a higher debt service burden (since repayments will include the principal) and to a macroeconomic scenario that is expected to gradually become less benign due to the increase in both the cost of some inputs and of financing.

For maturity extensions, the ICO-backed loans that were outstanding in January 2021 and had a residual maturity of more than six months were tracked through to July 2022. These loans have been classified based on whether, in the period January 2021-July 2022, they benefited from a maturity extension or not. Credit quality developments can then be studied for each loan type. In July 2022, loans whose maturity has ever been extended represented 55.7% of the overall exposures (see Chart 1, right-hand panel).

Starting with the ICO-backed loans whose grace period expired prior to July 2022, their credit quality deteriorated

---

1 According to the ICO monitoring report of May 2022, the loans under the "ICO Liquidity" guarantee facility had the following maturities: 34.4% between five and ten years, 38.4% between four and five years, 23.9% between two and four years and just 3.3% less than two years.

2 As at July 2022, the loans benefiting from maturity extensions under the Code of Good Practice (which regulates the different measures easing the conditions of guaranteed loans) increased by 13% in number and by 18% in amount as compared with the previous month. None of the loans underwent capital reduction or conversion into participating loans. A cumulative total of 12,655 loans have benefited from these measures to date, for an amount of €2,021 million.

3 Mainly Royal Decree-Law 34/2020 (see Box 2.2 of the Autumn 2021 FSR), Royal Decree-Law 5/2021 and Royal Decree-Law 6/2022. The specific eligibility conditions and requirements for the measures envisaged under Royal Decree-Law 5/2021, which included debt reduction, were subsequently determined in the Resolution of the Council of Ministers of 11 May 2021. Broadly speaking, the firms concerned could neither be in insolvency proceedings nor in arrears, and their turnover had to have fallen by at least 30% between 2019 and 2020. Firms not meeting that requirement could also apply for the measures, but granting them would be at the discretion of the financial institution since the Code of Good Practice would not apply. Royal Decree-Law 5/2021 allowed a further extension of two years if the firm had previously made use of the maturity extension under Royal Decree-Law 34/2020, or of five years otherwise. In either case, the maximum final maturity of the guaranteed loan was ten years (or eight where the State aid exceeds €2.3 million). Royal Decree-Law 6/2022 eliminated the requirement of a significant decline in revenue prompted by COVID-19 in order to qualify for these changes. It also envisaged the possibility of the Code of Good Practice determining the sectors, instances and circumstances in which the grace period can be extended by six months or an additional grace period can be established if the previous one has expired.

4 See European Systemic Risk Board (2021), *Financial stability implications of support measures to protect the real economy from the COVID-19 pandemic;* Financial Stability Board (2021), *COVID-19 support measures. Extending, amending and ending;* E. Rancoita, M. Grodzicki, H. Hempell, C. Kok, J. Metzler and A. Prapiestis (2020), "Financial stability considerations arising from the interaction of coronavirus-related policy measures", *Financial Stability Review,* November, Special Feature A; and E. Johannes and R. Zamil (2020), "Prudential response to debt under Covid-19: the supervisory challenges", *FSI Briefs,* 10, on the discussion of the effect of withdrawing these COVID-19-related relief measures.

as compared with December 2021. Specifically, measured in terms of amount drawn, the proportion of Stage 2 loans rose from 21.9% to 26.4% and that of non-performing loans from 3.6% to 5.7% (see Chart 2, left-hand panel). However, this performance does not differ greatly from that of total ICO-backed loans (see the black diamond in Chart 2, left-hand panel), although in this case the increase in the proportion of Stage 2 loans is somewhat smaller (from 20.3% to 23.2%). Overall, there is no indication that the grace periods coming to an end has entailed an abrupt deterioration in the quality of these loans.

From the sectoral point of view, and in relation to ICO-backed loans with expired grace periods, those extended to the sectors hardest hit by the pandemic had a higher proportion of both Stage 2 and non-performing loans at the outset (in December 2021) than ICO-backed loans

Chart 1
GRACE PERIODS AND MATURITY EXTENSIONS: SITUATION IN JULY 2022 (a)

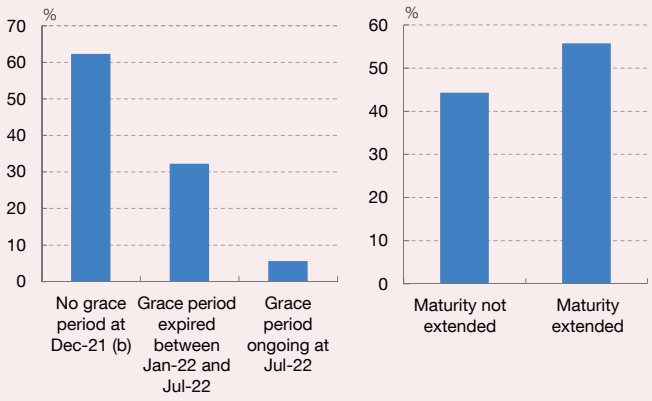


Chart 2
CREDIT QUALITY OF ICO-BACKED LOANS WITH EXPIRED GRACE PERIOD: TOTAL (l-h panel) AND SECTORS MOST AFFECTED (r-h panel)

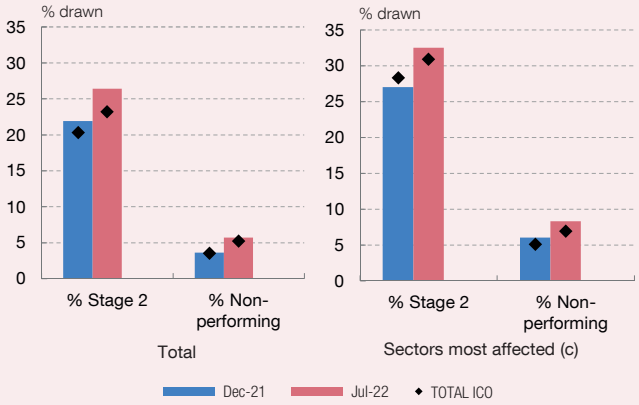


Chart 3
PERCENTAGE OF TROUBLED LOANS BY MATURITY EXTENSION: TOTAL (l-h side) AND SECTORS MOST AFFECTED (r-h side)

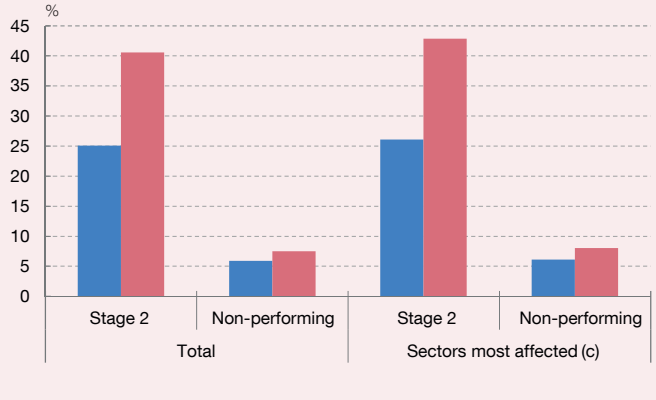
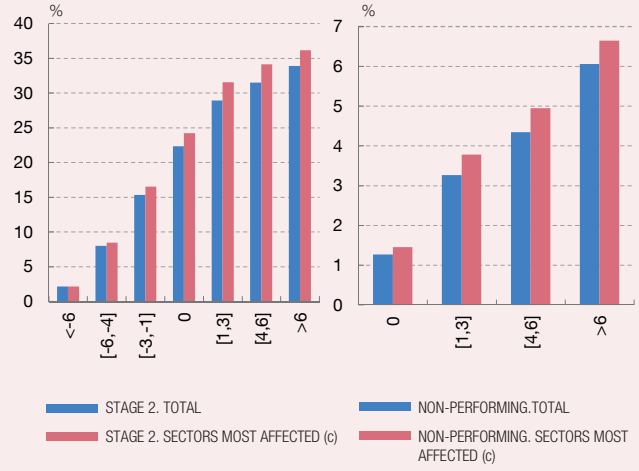


Chart 4
PERCENTAGE OF TROUBLED LOANS BY MOMENT OF MATURITY EXTENSION FROM JANUARY 2021 (d)



SOURCE: Banco de España.

a In the case of maturity extension, the ICO-backed loans that were outstanding at the start of 2021 and had a residual maturity of more than 6 months were tracked to July 2022. This allowed the loans to be classified based on whether they benefited from a maturity extension or not.
b December 2021 is used as a reference date prior to the expiry of most grace periods.
c The most severely affected sectors are proxied as the sectors with a fall in turnover of more than 15% in 2020, which can be identified in the FI-130 regulatory return. Specifically, lending to the most severely affected sectors includes hospitality, the manufacture of refined petroleum products, social services and entertainment, transportation and storage, and the manufacture of transport equipment.
d Percentage of Stage 2 or non-performing loans by date of first maturity extension (represented as t=0) from January 2021. The horizontal axis shows the number of months relative to this date of first maturity extension (t=0).

overall. However, the subsequent increase in those proportions was on a par with those of overall loans with expired grace periods, standing at around 5 percentage points (pp) for Stage 2 loans and 2 pp for non-performing loans (see Chart 2, right-hand panel). In 2022 H1, these sectors particularly benefited from the absence of health restrictions, which may explain why they do not show a negative differential performance.

Turning to maturity extensions, 25.1% of the loans whose maturity has never been extended have been classified as Stage 2 at some point. This compares with 40.6% for extended-maturity loans. The percentage of the number of loans classified as non-performing at some point in the period analysed is also higher for the group of firms that have extended the maturity of their loans (7.5%) than for those that have not (5.9%). Further, this effect is somewhat more pronounced among firms in the sectors most severely affected by the pandemic (see Chart 3).

These extended-maturity loans are analysed to identify whether the described performance occurred only after the extension or, conversely, had been observed previously. This is significant because it indicates whether the firms' credit risk increased when the maturity was changed or whether the applicants for such extensions were firms in a worse situation ex ante.

Thus, the moment of the first maturity extension is identified for each loan benefiting from the flexibility measures under the royal decree-laws, and whether it was classified as Stage 2 or non-performing for certain time periods before and after that extension. This reveals that the credit quality of a high percentage of the ICO-backed loans benefiting from maturity extensions and classified as Stage 2 already showed signs of deterioration prior to the extension, and that said worsening continued thereafter. Further, this performance is more pronounced among the firms in the sectors hardest hit by the pandemic (see Chart 4). Loans classified as non-performing show a very similar pattern.

Therefore, maturity extensions signal firms' reduced ability to pay in the short term. However, to date this has materialised above all as a latent deterioration in the form of a higher share of Stage 2 exposures. As regards grace periods coming to an end, no significant materialisation of that risk has been observed after 2022 Q2, when the majority ended. However, these portfolios should be monitored on an ongoing basis, first, because the deterioration resulting from the end of the grace periods could take place over a longer time frame and, second, because these exposures, like those with maturity extensions, might be affected to a greater extent by the potential deterioration of the macro-financial environment.

Box 2.2

FORWARD-LOOKING ASSESSMENT OF THE SPANISH BANKING SYSTEM'S RESILIENCE

The Banco de España has applied its own methodological framework, known as FLESB (Forward Looking Exercise on Spanish Banks),[1] to conduct the regular assessment of the Spanish banking system's solvency, which, on this occasion, takes place in an environment of significant macroeconomic uncertainty. A baseline scenario, which closely reflects the economic forecasts,[2] and an extreme but plausible adverse scenario, of worsening macro-financial conditions, covering the time horizon 2022-2024 have been analysed. Following the usual practice, this exercise is carried out under the dynamic balance sheet assumption, and banks' total assets therefore also change in line with the macroeconomic scenarios.

The adverse scenario assumes a high degree of materialisation of the risks identified in this report; specifically, it envisages higher and more persistent inflation, accompanied by a significant tightening of financial conditions and a sharp slowdown of GDP growth. This represents a major qualitative change from the scenarios in the Autumn 2021 FSR, in which the predominant risks related to activity and the erosion of confidence and were linked to the course of the health crisis, albeit still within an environment of low interest rates.

Description of the scenarios

Under the baseline scenario, the Spanish economy continues the recovery that began in 2021, reflected in a favourable path of real growth, and posts cumulative growth of 9.8% over the projection horizon (see Chart 1). By contrast, the adverse scenario envisages a cumulative contraction of 1.3% in the economy over the same horizon. One of the determinants of this lower growth is the assumption of a 20.6 percentage point (pp) increase in cumulative CPI-based inflation in the period 2022-2024 – largely associated with the increase in energy and food prices –, which is passed through to household and business costs. Moreover, this also results in much stricter financial conditions, owing to the monetary policy tightening and to a slight increase in risk premia, reducing agents' consumption and investment levels.

Indeed, the average levels of 12-month EURIBOR and of Spanish 10-year government bonds in 2022-2024 are

Chart 1
BASELINE AND ADVERSE SCENARIOS FOR SPAIN. MACROECONOMIC IMPACT (a)

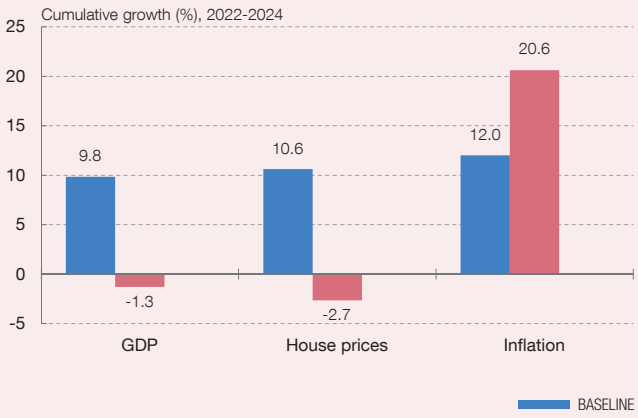
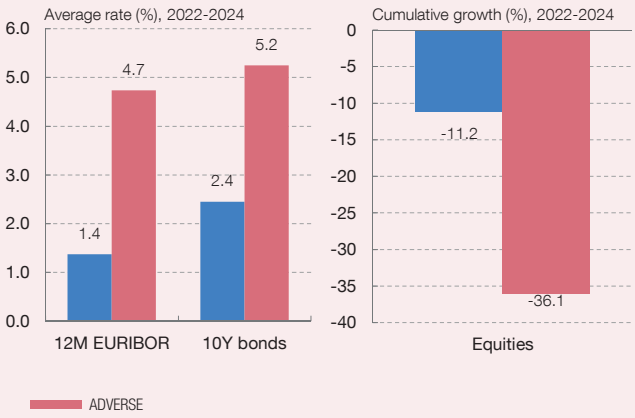


Chart 2
BASELINE AND ADVERSE SCENARIOS FOR SPAIN. IMPACT ON FINANCIAL ENVIRONMENT (b)



SOURCE: Banco de España.

a Inflation is calculated using the harmonised index of consumer prices (HICP).
b Changes in the valuations of equities are calculated drawing on the Madrid Stock Market General Index.

1 The FLESB is a top-down methodology developed internally by the Banco de España, which applies the same scenarios, assumptions and models consistently across all of the banks analysed. The data sources available are highly granular, reaching down to the level of individual transactions and foreclosed assets in operations in Spain. The main features of this framework are outlined in the November 2013 FSR. Over the succeeding years, the FSR has described the main improvements and new developments included in the model, since it is a dynamic framework under continuous development.

2 Growth under the baseline scenario is in line with the forecasts in the June 2022 EU-wide exercise for Spain and the other countries relevant to Spanish banks.

around 300 basis points higher in the adverse scenario than in the baseline scenario, reaching 4.7% and 5.2%, respectively (see Chart 2). This also affects stock market prices, with the Madrid stock market falling by 36.1% in cumulative terms up to 2024, compared with a decline of 11.2% under the baseline scenario.

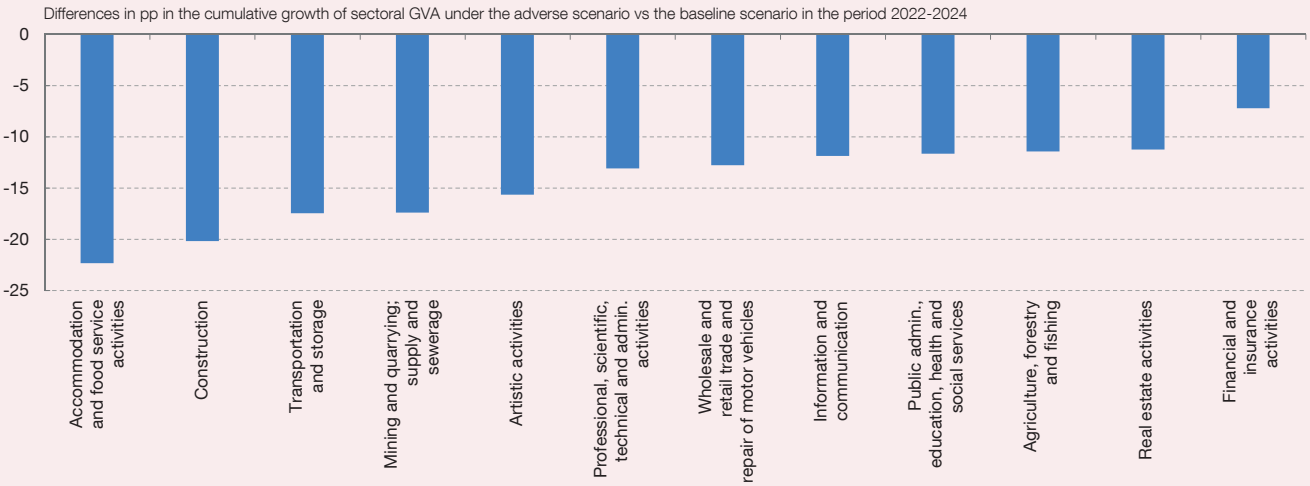
As a result of the differences in sectoral sensitivity to the higher energy and other commodity prices and to the fall in demand on account of the contraction in private sector real incomes, the impact of the adverse scenario on growth in each sector of activity varies (see Chart 3). The sector hardest hit is accommodation and food service activities, affected by the additional increase in transport and food prices and the reduction in household income, along with others (such as construction, transport and industry) that are intense users of energy and other commodities that become more expensive in the scenarios. Less energy-intensive activities, such as real estate and financial activities, feel less of a sectoral impact.

The scenarios for the other countries where Spanish banks have a significant presence are consistent with those used for Spain. Thus, Chart 4 shows the distribution by country of the cumulative growth in real GDP and prices, with the adverse scenario envisaging a situation of widespread stagflation (slow growth and high inflation), consistent with the significant deterioration in global supply conditions within the risk narrative. Turkey presents substantially higher inflation than the other countries, which is also reflected in its baseline scenario.

Chart 5 shows the average long and short-term interest rates for 2022-2024 under the baseline and adverse scenarios. A general upward transition can be seen for both rates, consistent with a global tightening of financial conditions. Under both scenarios, rates rise particularly in countries facing high inflation, such as Brazil and Turkey. In keeping with the interest rate rise in the advanced economies and the deteriorating macroeconomic situation of the emerging market economies, the adverse scenario also envisages an exchange rate depreciation against the euro in Mexico (10.5%), Brazil (6.7%) and, in particular, Turkey (77.1%) between 2021 and 2024.

The gradual deterioration of the macroeconomic projection scenarios over 2022 means that expectations have shifted to some extent towards the adverse scenario. However, the adjustments envisaged in these revised expectations are significantly smaller than the impacts of this adverse scenario, in particular as regards unemployment and GDP growth.[3] In the absence of further negative revisions to economic expectations, the effect of the macroeconomic factors on bank solvency would not be expected to deviate

Chart 3
EFFECT OF THE ADVERSE SCENARIO ON CUMULATIVE GROWTH OF THE NOMINAL GVA IN 12 SECTORS OF ACTIVITY IN THE PERIOD 2022-2024



SOURCE: Banco de España.

3 For example, in the case of Spain, the October 2022 macroeconomic projections revise inflation up and activity down vis-à-vis those drawn up in previous quarters.

greatly from the results obtained under the baseline scenario considered in this box. For instance, the available metrics of the FLESB model's sensitivity indicate that, due to the revisions made to the macroeconomic projections for Spain between June and October, the estimated CET1 ratio for 2024 would be expected to decrease by 33 basis points.[4]

It should also be borne in mind that the economic conditions are changing swiftly and that not all of their effective consequences can be measured concurrently. For instance, the effects of the upward revisions already made to inflation and interest rates would be expected to materialise over multiple quarters, despite not immediately impacting bank profitability.

Aggregate results of the exercise

Chart 6 summarises the aggregate results of the exercise, showing the CET1 ratio at the beginning and end of the time horizon, under the baseline and adverse scenarios. These results are broken down for three types of banks: (i) the Spanish banks supervised by the Single Supervisory Mechanism (SSM) that have significant international activity,[5] (ii) the other banks directly supervised by the SSM, and (iii) banks supervised directly by the Banco de España, which are smaller and have no significant international activity (Less Significant Institutions, or LSIs). The aim is to illustrate how the different business models of these groups affect the results.

The group of banks with an international presence initially has a CET1 ratio of 12.3% (lower than those of the other two groups), which increases to 12.6% at the end of the exercise under the baseline scenario, and decreases to 10% in the adverse scenario. The other banks supervised by the SSM have a CET1 ratio of 13.1% at the outset, which in the baseline scenario rises to 14% (increase in solvency), but decreases under the adverse scenario to 9.9% at the end of the exercise horizon. Lastly, the banks supervised directly by the Banco de España, which have a CET1 ratio of 19.1% in 2021, increase their solvency under both scenarios, and their CET1 ratio rises to 22.2% in the baseline scenario and to 20.6% in the adverse scenario. These results

Chart 4
DISTRIBUTION BY COUNTRY OF CUMULATIVE GROWTH IN REAL GDP AND INFLATION IN 2022-2024 UNDER BASELINE AND ADVERSE SCENARIOS (a) (b)

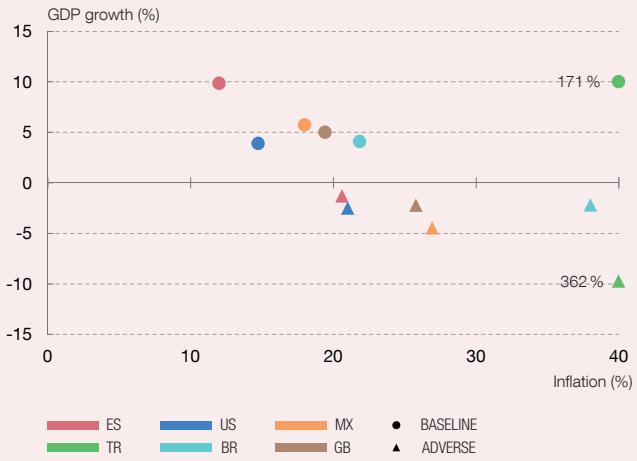
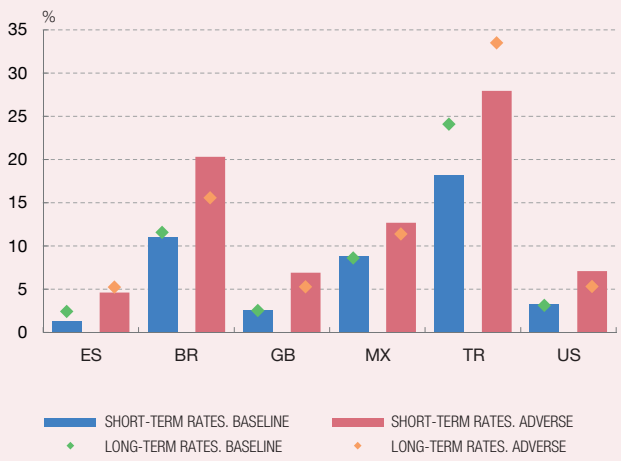


Chart 5
AVERAGE SHORT AND LONG-TERM RATES BY COUNTRY IN 2022-2024 UNDER BASELINE AND ADVERSE SCENARIOS



SOURCE: Banco de España.

a The range of the horizontal axis has been limited owing to the extreme values of cumulative inflation in Turkey (171% under the baseline scenario and 362% under the adverse scenario).
b Inflation is calculated using the harmonised index of consumer prices (HICP).

4 Compared with the June forecasts, the October 2022 projections envisage Spain's cumulative GDP growth being 0.8 pp lower in 2022-2024 and average benchmark rates in the euro area being around 100 basis points higher in the same period. The calculation of sensitivity to activity is underpinned by the analysis set out in Chapter 2 of the Spring 2019 FSR and the study of the model's sensitivity to interest rate rises.

5 Among the banks with significant international activity, this group includes the three in which such activity is more important and more extended in time.

show that Spanish deposit institutions' aggregate solvency would remain at satisfactory levels amid the high economic impact assumed in the adverse scenario. Nevertheless, there is heterogeneity across institutions, as discussed below in this box.

The main factors driving developments in the CET1 ratio over the time horizon are shown in Chart 7.[6] For Spanish banks with significant international activity, capital increases by 0.3 pp under the baseline scenario and is depleted by 2.3 pp under the adverse scenario. Under the baseline scenario, capital generation through net operating income in Spain and net profit/loss of foreign operations (6.7% of RWAs) and available provisions to cover impairment losses in Spain (2% of RWAs) offset the volume of impairment losses in operations in Spain and sovereign exposure valuation adjustments (5% of RWAs overall).[7] Operations outside of Spain make a particularly positive contribution to sustaining profitability and solvency in this scenario. However, other impacts make a negative contribution (-3.4% of RWAs), owing in part to taxes and to profit distributions, but also to the growth in business volume, which results in higher RWAs under this scenario.

Under the adverse scenario, impairment losses in Spain and losses on consolidated sovereign bond holdings rise to 10% of RWAs and are not offset by the use of provisions (2% of RWAs) and capital generation (6.1% of RWAs). The contribution of operations outside of Spain to net profit is positive, but smaller than under the

Chart 6
CET1 RATIO OBSERVED IN 2021 AND RESULTS IN 2024 OF BASELINE AND ADVERSE SCENARIOS

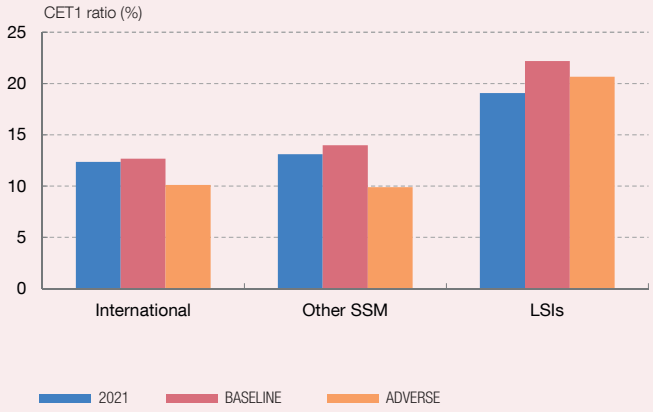
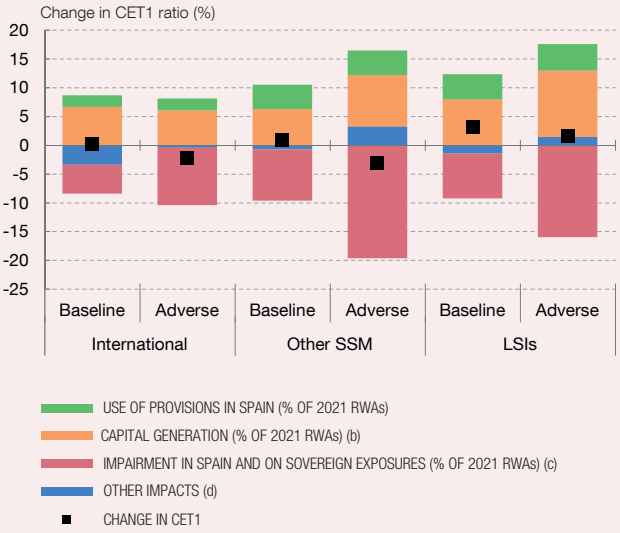


Chart 7
IMPACT OF THE RISK MATERIALISATION SCENARIOS ON BANK SOLVENCY (a)



SOURCE: Banco de España.

a The impacts are defined as the expected changes in the CET1 ratio in 2024 and in different financial flows in 2022-2024 (e.g. capital generation) stemming from the materialisation of the adverse changes in macro-financial conditions envisaged in the scenarios in this box.
b The generation of loss-absorbing capital is determined by net operating income in Spain, which also includes the net profit/loss generated abroad for banks with significant international activity.
c Impairment losses on loans and foreclosed assets in operations in Spain, and the impact on capital of the potential impairment on sovereign exposures at consolidated level.
d Other consolidated gains and losses, tax effects, exchange differences, profit distribution, coverage of Government losses linked to ICO-backed loans and changes in RWAs.

6 These include the effects of the estimated losses, specifically the impairment losses on loans and foreclosed assets and the impact on capital of a potential deterioration of sovereign exposures. Loss-absorbing items, namely the use of existing provisions and capital generation through net operating income, are also presented. Both the losses and the loss-absorbing items are presented as a percentage of the risk-weighted assets (RWAs) existing at December 2021. Also included are the other impacts, which reflect other items that affect CET1 capital (the numerator of the solvency ratio) such as other gains or losses and tax effects, and the change in RWAs (the denominator of the solvency ratio).

7 This group differs from the other two in two respects: first, it incorporates the net profit/loss of foreign operations in its capital generation (thus also capturing the higher impairment provisions outside of Spain under the adverse scenario) and, second, because of these banks' business model, the impairment losses, use of provisions and other effects in Spain have a lower relative weight in total RWAs.

baseline scenario, owing to the contraction in activity and also to the exchange rate depreciation in some emerging market economies. The less expansionary behaviour of RWAs compared with the baseline scenario prevents a greater decline in the CET1 ratio.

Turning to the other banks supervised by the SSM, their CET1 ratio increases by 0.9 pp in the baseline scenario and decreases by 3.2 pp under the adverse scenario. The use of provisions (4.3%) and capital generation (6.3%) more than suffice to absorb the impairment losses (8.9% of RWAs), and the contribution of the other impacts is negative but moderate (-0.8% of RWAs), evidencing a less expansionary business profile than that of the previous group. Under the adverse scenario, higher interest rates drive capital generation (8.9% of RWAs) through net operating income.

However, the sum of capital generation, the use of provisions (4.3%) and the other impacts (3.3%) – whose positive contribution is partly supported by a certain degree of deleveraging – does not suffice to offset the impairment losses (19.7% of RWAs). As with the other groups of banks, impairment losses increase substantially owing to the combination of lower economic activity and higher interest rates, which constrain households' and firms' ability to pay.

Lastly, as regards the banks directly supervised by the Banco de España, the CET1 ratio increases by 3.1 pp and 1.6 pp in the baseline and adverse scenarios, respectively, underpinned by a simpler business model and lower risk-taking. Under the baseline scenario, the generation of new loss-absorbing capital (8% of RWAs) and the use of provisions (4.4% of RWAs) more than offset the impairment losses (7.8% of RWAs) and other impacts (-1.5% of RWAs). In the adverse scenario, thanks to the increase in net interest income driven by the interest rate rise, new capital generation is highly positive (up to 11.5% of RWAs) and, together with the use of provisions (4.6% of RWAs), offsets the impairment losses (16% of RWAs), which also grow very notably, but to a somewhat lesser extent than for the other banks supervised by the SSM, due to the greater share of mortgages in their portfolios. The other impacts make a positive contribution (1.4% of RWAs) owing as well, in this case, to the greater deleveraging observed in the adverse scenario.

Analysis of the channels of impact

The aggregate results stem from various channels of impact that affect banks to differing extents, depending on their business model and the composition of their balance sheet.

One initial propagation channel, mitigating the risks, is through the improvement in net interest income, associated with the higher interest rates. The estimated median increase in net interest income of operations in Spain in the adverse scenario compared with the baseline scenario is 3.2 pp (see Chart 8). The cross-bank heterogeneity of the results depends on factors such as the weight of private sector deposits in each bank's sources of funds (as such deposits have a relatively lower cost than other sources of financing) and the composition of their loan portfolios, which have differing degrees of return relative to the cost of liabilities.

Another adjustment channel with respect to the baseline scenario, in this case negative, operates through sovereign bond valuation adjustments. The median additional loss on these exposures in the adverse scenario is 0.8 pp of RWAs (see Chart 8). Such losses are also uneven across banks and are higher for those which have a greater share of sovereign bonds that are classified at fair value,[8] that have longer terms to maturity and that are from countries facing higher discounts on their government debt.

Lastly, the negative effect of both the interest rate rise and the contraction in GDP on the quality of credit to firms and households[9] leads to a heterogeneous rise in impairment provisions among banks (see Chart 8). Taking into account the differences in loan quality at the outset, the varying composition of the exposures and the degree of coverage from the ICO guarantees, the estimated median increase in credit provisions in Spain is 7.4 pp of RWAs higher in the adverse scenario than in the baseline scenario. It is important to note that, in the transition to this adverse scenario, the negative effects on provisions outweigh the positive effects on net interest income.

8 Various bank investment portfolios are classified at fair value, and the value of such assets is recognised based on their realisable market value. They are classified as such as it is assumed there is a possibility that, as part of its investment strategy, the bank may sell these assets before maturity. Conversely, assets expected to be held to maturity, for example with the purpose of collecting interest payments, are measured at amortised cost, and their value reflects the unamortised unimpaired portion of their nominal amount.

9 Loans to firms account for 45.8% of loans within operations in Spain as a whole, while those to households account for 54.2%.

Additional sensitivity analyses

As on previous occasions, the exercise also factors in the effect of the ICO public guarantee scheme for business lending in response to the pandemic, to mitigate impairment losses and support Spanish banks' solvency. However, it should be borne in mind that the more impairment losses the scheme is able to absorb, the greater its budgetary cost. The estimates consider an impact range based on assumptions about the relative credit quality of the guaranteed loans (see Chart 9), since there is still uncertainty about their

Chart 8
DISTRIBUTION AMONG BANKS OF THE IMPACT OF THE ADVERSE SCENARIO ON THE INTEREST MARGIN, PROVISIONS AND THE SOVEREIGN EFFECT RELATIVE TO 2021 RWAs (a). SIs

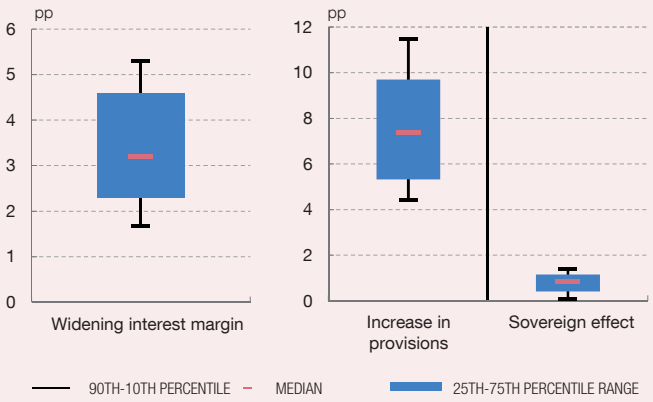


Chart 9
EFFECT OF THE ICO GUARANTEE SCHEME (b) (c)

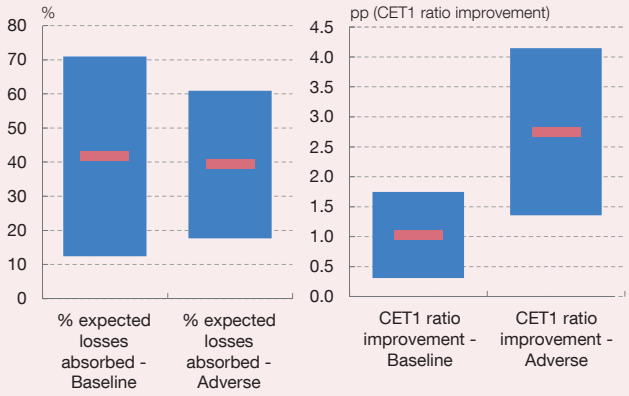
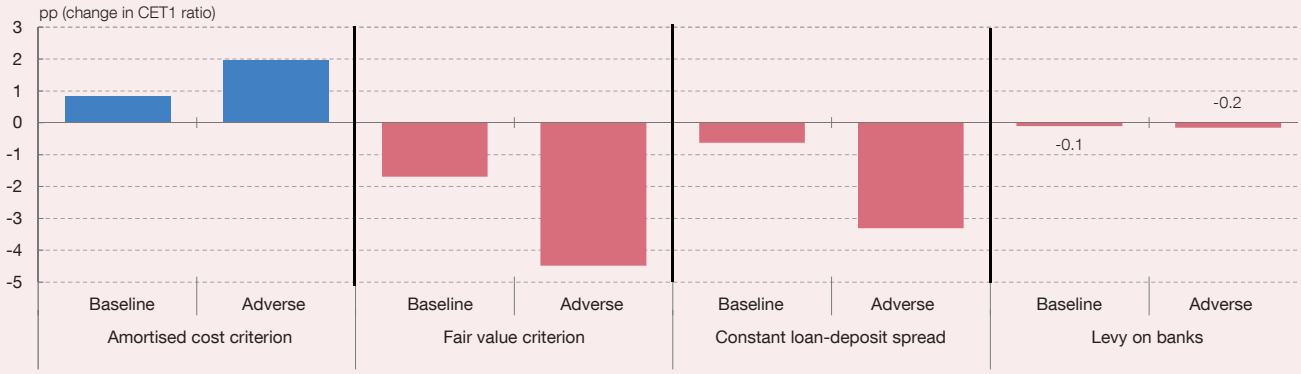


Chart 10
SENSITIVITIES TO OTHER MODELLING ASSUMPTIONS (d)



SOURCE: Banco de España.

a Shown is the distribution among banks of the differences between the adverse scenario and the baseline scenario in earnings due to the widening of the net interest margin in operations in Spain, in losses due to the higher provisions in operations in Spain and in the effect of sovereign exposures in consolidated operations. These measures are cumulative in the horizon 2022-2024 relative to 2021 RWAs for the baseline and adverse scenarios, and the institutions considered are SIs. The bars represent the values between the 25th and 75th percentiles, while the lines show the 10th, 50th (median) and 90th percentiles.
b The main analysis (the results of which are set out in Charts 6 and 7 of this box) incorporates an intermediate assumption about the effect of the guarantee scheme.
c Shown is the range of the measure's impact on the expected loss of the corporates portfolio (left-hand panel) and on the CET1 ratio (right-hand panel), depending on the assumptions regarding the credit quality of loans extended to firms and sole proprietors in Spain under the ICO guarantee scheme. The minimum effect assumes that the expected loss is equal to the average of the corporate lending portfolio, while the maximum effect assumes that NPL inflows are primarily concentrated among guaranteed loans. The red line denotes the mid-range effect.
d Shown are the differences in the average CET1 capital ratios of SIs and LSIs projected for 2024 in the sensitivity exercises compared with those projected for 2024 in the main solvency exercise. The sensitivity exercises consider the following impacts: i) the effect of reclassifying all sovereign bond exposures to amortised cost; ii) the effect of reclassifying all sovereign bond exposures to fair value; iii) the impact of keeping the loan-deposit spread constant; and iv) the impact of applying a levy of 4.8% on the net interest income and net fee and commission income of financial institutions where such income exceeded €800 million (gross) in 2019.

scope.[10] Under an intermediate assumption, by absorbing part of the losses, the public guarantee scheme would make a positive contribution of 1 pp and 2.7 pp to the CET1 ratio in the baseline and adverse scenarios, respectively.

In this exercise, sensitivity analyses have also been conducted with respect to other relevant modelling assumptions in the scenarios considered (see Chart 10). First, an assumption whereby banks classify all their (Spanish and foreign) public debt holdings at amortised cost has been assessed. In this hypothetical case, the CET1 ratio would be 0.8 pp and 2 pp higher in the baseline and adverse scenarios, respectively, than in the results of the main exercise, which considers the real weight of debt at amortised cost in banks' portfolios at end-2021. As a result, the banks would limit the short-term losses in value owing to the interest rate rises if they classified their entire sovereign bond portfolios at amortised cost. However, this would also mean keeping relatively low-yield instruments on their balance sheet for longer, an additional effect that has not been examined. At the opposite extreme, if the banks held all their sovereign bond holdings at fair value, the decline in value of public debt holdings would lead to the CET1 ratio being 1.7 pp and 4.5 pp, respectively, lower than in the main exercise. This analysis is intended to gain a better understanding of the functioning of the channels of impact and the mitigating elements and does not represent an extension of the adverse scenario or an additional source of tension, as the banks can continue to recognise these holdings at amortised cost.

Moreover, a study has been carried out of the effect of banks keeping the loan-deposit spread constant, in contrast to the approach taken in the exercise to estimate developments based on historical experience, which predicts a significant widening of net interest unit margins on account of the interest rate rise. In that case, solvency would decrease by 0.6 pp and 3.1 pp under the baseline and adverse scenarios, respectively. Margins may widen less than estimated in the exercise as a result of an insufficient pass-through of market rates to lending rates, along with concern about retaining deposits in a crisis environment, which would lead banks to remunerate deposits more than they would do under normal circumstances. In any event, this is an illustrative sensitivity analysis, and the existing empirical evidence points strongly to spreads widening in settings of interest rate rises.

Further, the impact of applying a levy of 4.8% on the net interest income and net fee and commission income of financial institutions where such income exceeded €800 million (gross) in 2019 has been assessed. This levy would reduce the aggregate CET1 ratio by 0.1 pp and 0.2 pp under the baseline and adverse scenarios, respectively. In the adverse scenario, the tax base is also increased by the growth in net interest income. The levy would thus lead to a larger relative burden, precisely when profitability and solvency are lower.

Conclusions

The analysis conducted shows that the materialisation of the main risks considered in this report could have a significant impact in capital charge terms, although the sector's loss-absorbing capacity would suffice to maintain a satisfactory aggregate solvency position. These results should be interpreted with special caution owing to the greater uncertainty faced in this year's exercise. In particular, the use of scenarios with marked interest rate rises represents a break from the stress tests of more recent years, which were primarily concerned with the risks of a contraction in demand on account of the pandemic. In these circumstances, numerous items on banks' balance sheets and income statements, such as net interest income and provisions, may be subject to marked adjustments, potentially of contrasting sign, and the range of possible outcomes is wider than in other settings. Idiosyncratic factors may also operate in the situation of individual banks, beyond the macroeconomic factors that are of particular importance to the analysis set out in this box.

All this calls for a cautious positioning by the sector when considering provisioning and capital plans and for close monitoring of macroeconomic developments, to enable a swift response should the risks envisaged ultimately materialise.

10 The bottom end of the range assumes that the expected loss on guaranteed loans is equal to the average for the corporate credit portfolio; the top end assumes that the guaranteed loans are concentrated among riskier debtors. The results presented in this box are based on the impact of the ICO guarantees standing at the midpoint of this range.

Box 2.3

ECB OPINION ON THE PROPOSED TEMPORARY LEVY ON THE SPANISH BANKING SECTOR

As noted in the main body of this Report, a draft law to establish a temporary levy on credit institutions and specialised lending institutions is currently before the Spanish parliament. The proposed levy is expected to be in force from 2023 to 2024 and would apply to entities exceeding a minimum gross interest income and fee and commission income threshold in 2019 set at €800 million. The tax rate would be 4.8% and the base would be the total 2022-2023 net interest income and net fee and commission income. Moreover, the draft law states that the amount of the levy and its advance payment will have no economic repercussion. In other words, the levy cannot be passed on to the customers of the credit and financial institutions affected.[1]

The measure seeks to raise around €1.5 billion a year. On the Banco de España's estimates, this would be 0.11% of the risk-weighted assets (RWAs) of the institutions affected at December 2021, and 0.10% of the RWAs of all deposit institutions (Total DIs).[2] The levy amounts to 0.87% of the common equity tier 1 (CET 1) capital of the institutions affected at December 2021 (0.77% in the case of Total DIs). It also represents 12% of the net profit from business in Spain of the institutions affected (10.8% for the Total DIs). In any event, it should be borne in mind that the relative impact this measure ultimately has will depend on how profits and balance sheet growth develop in 2022 and 2023. As analysed in Box 2.2, the measure could have a greater relative impact in an adverse scenario.[3]

On 23 September 2022 the European Central Bank (ECB) received a request from the Banco de España, on behalf of the Spanish Parliament, for an opinion on the draft law. The ECB's competence to deliver an opinion is based on the Treaty on the Functioning of the European Union and on Council Decision 98/415/EC, as the draft law concerns the Banco de España, rules applicable to financial institutions insofar as they materially influence the stability of financial institutions and markets, and the ECB's tasks concerning the prudential supervision of credit institutions. In accordance with the ECB's Rules of Procedure, the opinion was adopted by the Governing Council on 2 November 2022.[4] The content of the opinion, which focuses on several aspects from a monetary policy, financial stability and banking supervision standpoint, is summarised below.

First, the opinion describes the current monetary policy context, marked by high inflation, which has led the ECB, in line with its primary objective of maintaining price stability in the medium term, to embark on a process of monetary policy normalisation. From this perspective, the opinion notes that credit institutions play a special role for ensuring the smooth transmission of monetary policy measures to the wider economy. Thus, an adequate capital position helps credit institutions to avoid abrupt adjustments to their lending to the real economy.

Evidence shows that net interest income typically tends to expand on impact as policy rates increase, and this effect is higher the lower the weight of long-term loans and, among these, the lower the proportion of fixed interest rate operations. However, this effect can be offset by lower lending volumes, by losses recorded in the securities portfolio and by an increase in provisions resulting from a deterioration of the quality of the credit portfolio. The realisation of downside risks in the current environment may significantly reduce the repayment capacity of debtors. The net effect of monetary policy normalisation on credit institutions' profitability might, therefore, be less positive, or even negative, over an extended horizon.

Thus, as the determination of the addressees of the temporary levy is based on total reported interest and fee commission income in 2019, the ECB opinion notes that these institutions may record low profits or losses at the point in time when the levy is actually collected. It concludes that if the ability of credit institutions to attain adequate capital positions is damaged, this could endanger a smooth bank-based transmission of monetary policy measures to the wider economy.

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1 As per the draft law, the National Commission on Markets and Competition (CNMC) is responsible for ensuring compliance with this obligation, without prejudice to the competences of the Banco de España and its duty to cooperate in this respect.

2 Overall, the banks that would exceed the income threshold triggering the levy account for more than 90% of the RWAs of Total DIs, so the impact of the measure in proportion to their profits or balance sheet is close to that for all deposit institutions in Spain.

3 See Chart 10 in Box 2.2, where the impact of the levy is analysed relative to 2024 RWAs under two simulated macroeconomic scenarios. This may give rise to differences in terms of the impact on the 2021 RWAs considered here.

4 See ECB Opinion CON/2022/36 of 2 November 2022 on Draft Law 122/000247 for the establishment of temporary levies on energy and on credit institutions and specialised lending institutions.

Second, from a financial stability standpoint, the ECB has issued previous opinions on other draft legislation introducing levies on credit institutions in several Member States. In this respect, the ECB has declared that using the proceeds from taxes levied on credit institutions for general budgetary purposes is not desirable if, and to the extent that, it makes them less resilient to economic shocks and, in consequence, limits their ability to provide credit, resulting in less favourable conditions being offered to customers for loans and other services and reductions in certain activities, which would create uncertainty and adversely affect real economic growth. In line with these considerations, in the past the ECB has recommended that a clear separation is needed between the extraordinary account created out of the proceeds from the levies and general government's general budgetary resources, to avoid their being used for general fiscal consolidation purposes.

The opinion also indicates that imposing ad hoc taxes or levies on credit institutions for general budgetary purposes should be preceded by a thorough analysis of potential negative consequences for the banking sector, to ensure that these taxes do not pose risks to financial stability, banking sector resilience or the provision of credit, which could adversely affect real economic growth. Consequently, the levy should be carefully considered as regards its impact on the profitability of the credit institutions affected and, therefore, on their internal credit generation and lending.

Further, it states that imposing a temporary tax on a credit institution recording net losses would significantly distort and even further damage the resilience of a loss-making bank. Moreover, levying a tax only on certain Spanish credit institutions could distort market competition and impair the level playing field both within the country and across the banking union.

Accordingly, the ECB recommends that the draft legislation be accompanied by a thorough analysis of the potential negative consequences for the banking sector, detailing in particular the specific impact of the temporary tax on the profitability of the credit and financial institutions affected and on the market competition conditions, to ensure that the levy of the tax poses no risks to financial stability, banking sector resilience or the provision of credit.

According to the opinion, this recommendation is particularly relevant in the current economic and financial environment, which features high uncertainty and the prospect of increasing loan loss provisions having to be made by credit institutions owing to the sharp expected slowdown in real economic activity. In this setting, it should be taken into consideration that credit institutions have already had to record higher provisions for their exposure to non-financial corporations operating in high energy-intensive sectors.

Third, from a prudential supervisory standpoint, the ECB understands that, given that the basis on which the temporary levy would be established does not take into account the full business cycle and does not include, inter alia, either operating expenses or the cost of credit risk, the amount of the temporary levy might not be commensurate with the profitability of a credit institution. Accordingly, as a result of the general application of the temporary levy, credit institutions that are not necessarily benefitting from current market conditions could become less able to absorb the potential downside risks of an economic recession.

The ECB also understands that the generic provision stating that the temporary levy cannot be passed on to credit institutions' customers could generate uncertainty, as well as related operational and reputational risks for those institutions. It points out that price increases applied to customers owing to (i) cost increases other than the temporary levy, such as operating, funding or capital costs, (ii) cost increases relating to risk coverage, and (iii) commercial margin adjustments, are all legitimate increases. In general, the ECB expects credit institutions, in accordance with international best practice, to consider and reflect in their loan pricing all relevant costs, including tax considerations. The ECB also asks for clarification as to which verification mechanisms the CNMC will use to ensure compliance with this requirement. Given the whole range of circumstances that might lead to price increases in the current setting of interest rate rises, inflation and deteriorating risk premia, it seems it would be difficult to determine whether or not the temporary tax was actually being passed through to customers.

Lastly, a number of additional considerations are made. First, the opinion indicates that there is a discrepancy between the wording used in the draft legislation to establish the criteria determining which credit and financial institutions would be affected by the temporary levy, which refers to "the total interest income and commission income, as determined in accordance with the applicable accounting legislation", and the wording used to determine the base to

which the 4.8% temporary levy applies, which refers to "the sum of the interest margin and commission income and expenses shown in their profit and loss account for the previous calendar year". In this respect, and as regards the determination of the base for the temporary levy, the ECB understands that the levy applies to net interest income and net fee and commission income. Accordingly, it concludes that a clearer terminology in the final text on the criteria for determining the credit and financial institutions affected would be desirable for the purposes of greater legal certainty. Second, the opinion states that the cooperation role assigned to the Banco de España to ensure that credit institutions comply with the requirement established in the draft legislation as regards not passing on the amount of the temporary levy to their customers is not clear. In this respect, the ECB underlines that this matter could be further clarified, specifying that it does not amount to any new task being conferred upon the Banco de España.

3

SYSTEMIC RISK AND PRUDENTIAL POLICY

The contemporaneous indicators of systemic financial stress rose significantly in 2022 Q3, accentuating the rising trend observed since mid-2021. These financial stresses largely reflect the economic fallout from the war in Ukraine, such as increased uncertainty and heightened inflationary pressures, which in Europe have been driven in particular by rising energy and food costs and global supply chain disruptions. However, the combination of higher uncertainty and inflation has not, for the moment, slowed the reduction in the key credit and activity indicators that inform the quarterly decisions on the countercyclical capital buffer (CCyB), after these indicators were driven up in 2020 by the economic impact of COVID-19.

In the coming quarters, the substantial economic uncertainty, coupled with monetary policy tightening to curb inflation, will exacerbate the downside risks to the economic growth outlook and to the provision of financing to the economy. Against this background, it is advisable to hold the CCyB rate at 0%. Meanwhile, developments in the real estate sector warrant particular attention, given the persistence of the moderate signs of price imbalances identified in previous editions of the Financial Stability Report (FSR). Although the most recent indicators show some signs of a possible slowdown in the real estate market, this cannot be confirmed until more information is available. Furthermore, while there is no evidence of a widespread easing of lending standards, some more heavily indebted borrower segments have been identified which would have to adjust their expenditure budgets in a scenario in which macroeconomic risks materialise.

3.1 Analysis of risk indicators and systemic vulnerabilities

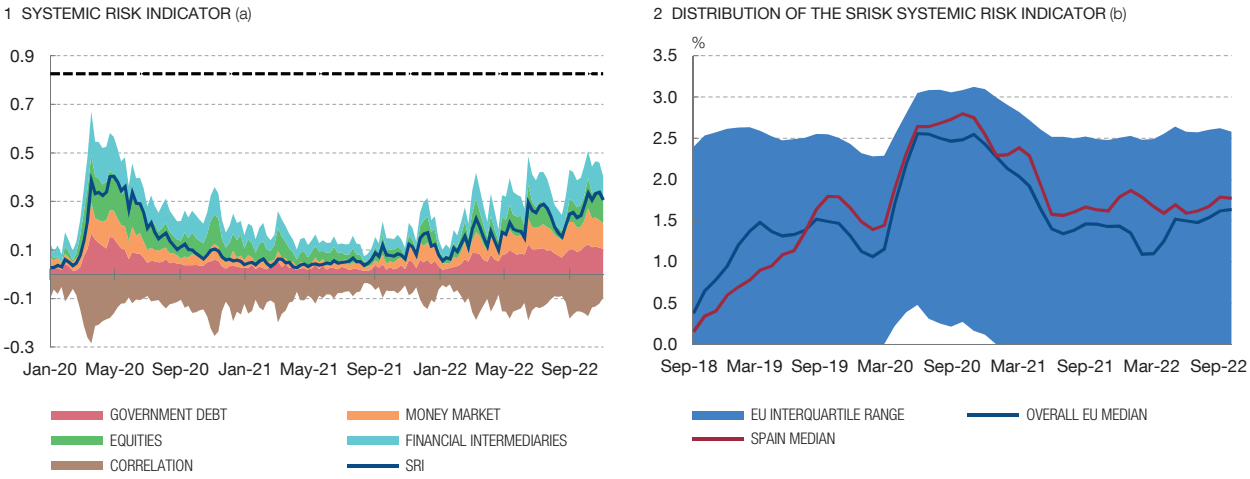
Systemic stress in the financial markets has intensified in recent months due to the persistence of inflationary pressures and higher uncertainty. The Banco de España's systemic risk indicator (SRI)[1] rose significantly during 2022 Q3, although it remains below the levels reached in March 2020 at the start of the pandemic (see Chart 3.1.1). Tensions increased across all four of the financial segments captured by the SRI – meaning closer correlation between them –, which reduced the diversification opportunities for investors. These developments reflect the tightening of financial conditions prompted by the increase in risk premia associated with the heightened

1 This indicator comprises information on the four most representative segments of Spain's financial markets (the money, government debt, equity and bank funding markets) and is designed to increase in value when tensions arise simultaneously in these four segments. For a detailed explanation of the SRI calculation methodology, see Box 1.1 of the May 2013 FSR.

Chart 3.1

THE SRI AND SRISK INDICATORS REMAIN ON AN UPWARD TRAJECTORY, ALBEIT STILL WELL SHORT OF THE LEVELS REACHED IN THE EARLY STAGES OF THE COVID-19 PANDEMIC

The upturn that began in mid-2021 has continued in 2022, given the persistence of geopolitical and inflationary tensions, the deterioration of the economic outlook and the tightening of financial conditions. In the EU overall, the systemic risk of banks measured by the SRISK indicator has increased since the start of the war in Ukraine. In recent months, Spanish banks, which were initially relatively less affected, have performed more in line with their European counterparts.



SOURCES: Datastream, SNL Financial, INE and Banco de España.

a The systemic risk indicator (SRI) aggregates 12 individual stress indicators (volatilities, interest rate spreads, maximum historical losses, etc.) from four segments of the Spanish financial system. In calculating the SRI, the effect of cross-correlations is taken into account, whereby the SRI registers higher values if the correlation between the four markets is high, and lower values where there is less or negative correlation. For a detailed explanation of this indicator, see Box 1.1 of the May 2013 FSR. The dotted line represents the SRI's historical maximum. Data updated as at 2 November 2022.

b The SRISK indicator, expressed as a percentage of each institution's total assets, captures the capital shortfall against bank capital requirements at market value in the event of a significant market shock. The parameters used are 4.5% for capital requirements, 10% for the decline in the European equities index, and 22 business days for the period over which the hypothetical market decline occurs; see C. Brownlees and R. Engle (2017), "SRISK: A conditional capital shortfall measure of systemic risk", *The Review of Financial Studies,* Vol. 30. for further details. The SRISK indicator for the months of 2022 Q3 is calculated based on 2022 Q2 assets and liabilities values, drawing on the stock price data of the corresponding month. The series have been smoothed using a three-month moving average. The interquartile range is defined as the difference between the first and third quartiles of the SRISK distribution for EU banks. Data updated as at 30 September 2022.

uncertainty and with the monetary policy measures adopted by the ECB and other authorities to curb inflation. Moreover, the geopolitical tensions and their economic ramifications, particularly those linked to the drastic reduction in the supply of Russian gas to Europe, have also contributed to the systemic financial stresses.

The SRISK indicator has risen somewhat since March 2022, both for the EU as a whole and for Spanish banks. The backdrop of higher geopolitical tensions and economic uncertainty has driven up banks' contribution to systemic risk, proxied by the SRISK indicator (see Chart 3.1.2).[2] Following the Russian invasion of Ukraine, the better relative performance of Spanish banks' SRISK brought it closer to the European median. Since July 2022, the median SRISK indicator for Spain's six listed

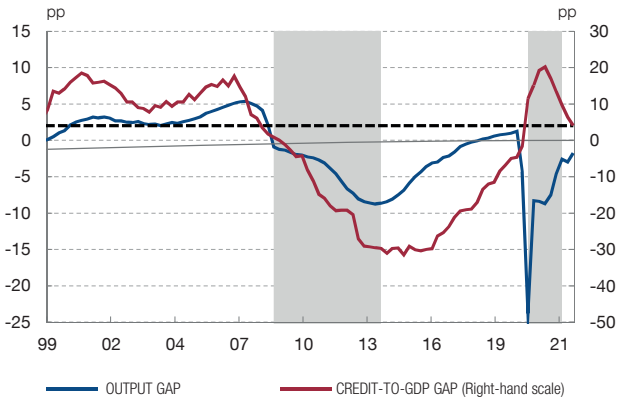
2 See C. Brownlees and R. Engle (2017), "SRISK: A Conditional Capital Shortfall Measure of Systemic Risk", *The Review of Financial Studies,* Vol. 30, Issue 1, pp. 48-79. This indicator measures the market value of the regulatory capital shortfall of an individual bank or the banking sector overall following a significant correction in the equity market. It thus constitutes a systemic risk metric, since the high cost of making up a capital shortfall for the banking sector could distort financial intermediation.

Chart 3.2

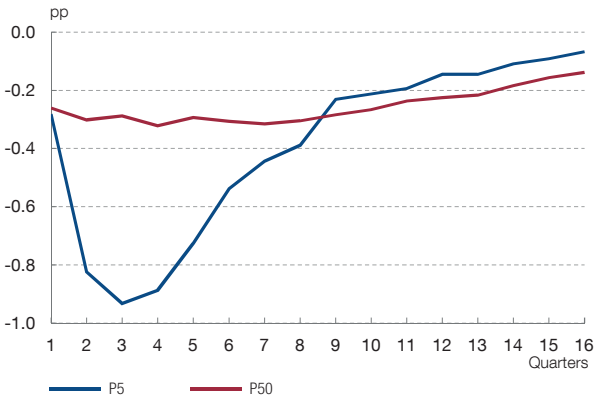
THE CORRECTION OF THE CREDIT-TO-GDP GAP AND THE OUTPUT GAP CONTINUE, ALBEIT MORE SLOWLY IN THE LATTER CASE. IN ADDITION, THE INCREASE IN INFLATION ENTAILS HIGHER RISKS TO GROWTH

The credit-to-GDP gap narrowed for the third consecutive quarter, but remains above the 2 pp reference threshold against a backdrop of great uncertainty. The output gap has already largely recovered from the deterioration that occurred at the start of the pandemic, but remains in negative values and its rate of recovery is slowing. The upsurge in inflation would also raise the risk of very low, or even negative, growth rates under an adverse scenario. However, if the heightened inflation does not prove enduring, the adverse effects on the risks to growth would be concentrated in the near term.

1 CREDIT-TO-GDP GAP AND OUTPUT GAP (a)



2 IMPACT OF AN INCREASE IN INFLATION ON FUTURE GDP GROWTH (b)



SOURCES: INE and Banco de España.

a The output gap is the percentage difference between observed GDP and potential quarterly GDP. Values calculated at constant 2010 prices. See P. Cuadrado and E. Moral-Benito (2016), "Potential growth of the Spanish economy", *Occasional Paper* No 1603, Banco de España. The credit-to-GDP gap is calculated as the difference, in percentage points, between the observed ratio and the long-term trend calculated using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 25,000. This parameter is calibrated to the financial cycles historically observed in Spain. See J. E. Galán (2019), "Measuring credit-to-GDP gaps. The Hodrick-Prescott filter revisited", *Occasional Paper* No 1906, Banco de España. Data available up to June 2022. The areas shaded in grey represent the periods of the two financial crises in Spain since 2009: the systemic banking crisis (2009 Q1-2013 Q4) and the crisis triggered by the COVID-19 pandemic (2020 Q1-2021 Q4). The horizontal dotted line represents the credit-to-GDP gap reference threshold (2 pp) for activation of the CCyB.

b The lines represent the estimated impact of a 1 pp increase in the 12-month inflation rate in a given quarter on the 5th percentile (P5) and 50th percentile (P50) of the distribution of year-on-year GDP growth in various future quarters, conditional on macro-financial variables, the macroprudential policy stance and the inflation rate. The sample comprises the 27 EU countries plus the UK, taking quarterly data between 1990 and 2022. For more details on the methodology used, see J. Galán (2020), "The benefits are at the tail: Uncovering the impact of macroprudential policy on growth-at-risk", *Journal of Financial Stability,* 100831.

banks has steadily increased, in line with that for European banks, coinciding with the tightening of monetary policy and the deterioration of the economic outlook. However, this index remains significantly lower than in the initial months of the COVID-19 pandemic both for the Spanish banks and for European banks as a whole.

The additional recovery in economic activity and the moderation in lending helped the credit-to-GDP gap to continue narrowing in 2022 H1. This decline further corrected the distortions caused to this indicator by the onset of the COVID-19 pandemic and the abrupt drop in GDP in 2020 (see Chart 3.2.1). In any event, the credit-to-GDP gap remained above the 2 pp reference threshold that signals imbalances in the credit cycle.[3]

3 This threshold applies under the statistical specification used by the Banco de España to calculate the credit-to-GDP gap, adjusted to the historically observed average duration of the credit cycle in Spain. The standardised credit-to-GDP gap (the "Basel gap") has moved in parallel, but holding at negative levels and below its reference threshold. As discussed in the FSR editions published since 2020, a reduction in GDP for exogenous reasons, such as the pandemic, changes the interpretation of the excess over the threshold, recommending against the activation of measures in this case.

GDP growth has also contributed to the upward path of the output gap, which, however, remains in negative values and is beginning to show some slowdown in its rate of recovery.

Persistently high inflation has a negative impact on GDP growth, which would be more pronounced in a risk scenario.[4] Estimates based on a growth-at-risk model for EU countries show that, in the short term, each percentage point increase in the current 12-month inflation rate would have a negative impact of up to 0.9 pp on the real growth rate under an adverse scenario (associated with the materialisation of the series of macro-financial risks identified in this report), although this effect would dissipate over longer time horizons (see Chart 3.2.2).[5] Meanwhile, the effect of inflation on expected GDP growth under a more likely scenario would also be negative, although to a far lesser extent. Furthermore, additional rises in inflation in subsequent quarters would see the risks to growth remain high over a longer period of time.

The high inflation environment and the rise in interest rates could also have other adverse implications for financial stability. As discussed in previous chapters, the reduction in real income due to the increase in inflation and the higher cost of debt erode households' and firms' ability to pay. This increases the likelihood of the banking sector having to record additional provisions to cover larger potential losses, thus reducing banks' profitability. This effect would be offset, at least in part, by the increase in net interest income in the banking sector driven by higher interest rates, particularly in the short term. Moreover, this situation could also cause sovereign risk premia to rise, particularly for countries with higher debt levels. This, in turn, would decrease the value of banks' sovereign bond holdings and would further drive up financing costs for the private sector, for which government debt yields typically represent a floor. The upshot would be an increase in the risks linked to the sovereign-bank nexus, albeit mitigated by factors such as longer maturities and the greater stability and diversification in terms of holders of Spanish government debt as compared with previous periods.

The indicators of real estate market imbalances continue to show moderate signs of overvaluation. These indicators of imbalances in house prices, measured in real terms, have held in positive territory since 2020, albeit close to their equilibrium levels (see Chart 3.3.1). The imbalances owe both to rising house prices and the drop in disposable income prompted by the onset of the COVID-19 pandemic,

4 This risk scenario corresponds to the level of GDP growth that would occur with a 5% probability, at the lower end of the distribution of possible GDP growth levels in future quarters.

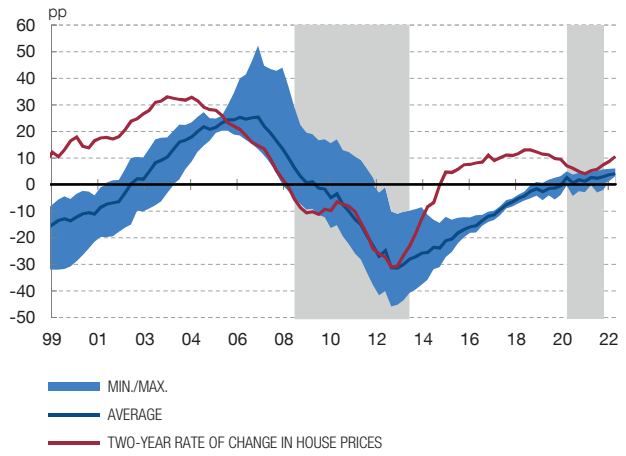
5 A model is estimated based on quantile regressions for the distribution of GDP growth conditional on macro-financial variables, the macroprudential policy stance and the inflation rate. The sample comprises the 27 EU countries plus the United Kingdom, taking quarterly data between 1990 and 2022. For more details on the methodology used, see J. Galán (2020), "The benefits are at the tail: Uncovering the impact of macroprudential policy on growth-at-risk", *Journal of Financial Stability,* 100831.

Chart 3.3

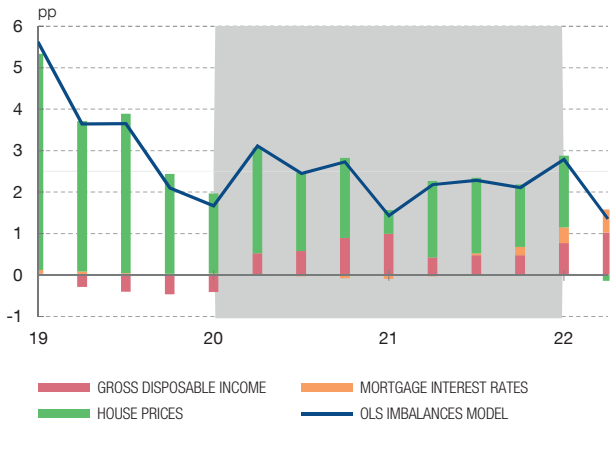
THE INDICATORS OF REAL ESTATE MARKET IMBALANCES CONTINUE TO SHOW MODERATE SIGNS OF OVERVALUATION

Since 2020, the indicators of price imbalance in the real estate market have held in positive values but close to their equilibrium value. Although house prices are the main determinant of imbalances, the sharp decline in disposable income in the past two years has also played a relevant role. The tightening of financial conditions could reduce these imbalances, and should therefore be monitored closely in the coming quarters.

1 INDICATORS OF HOUSE PRICE IMBALANCES (a) (b)



2 QUARTERLY CHANGE IN THE ORDINARY LEAST SQUARES (OLS) INDICATOR OF HOUSE PRICE IMBALANCES (a) (c)



SOURCES: INE and Banco de España.

a The areas shaded in grey represent the periods of the two financial crises in Spain since 2009: the last systemic banking crisis (2009 Q1-2013 Q4) and the crisis triggered by the onset of the COVID-19 pandemic (2020 Q1-2021 Q4). Data updated as at June 2022.

b The blue shaded area represents the minimum and maximum values of the four indicators of imbalances in house prices. The indicators are: (i) the real house price gap; (ii) the house price-to-household disposable income ratio gap; (iii) the ordinary least squares (OLS) model which estimates house prices based on long-term trends in household disposable income and mortgage interest rates; and (iv) the error correction model which estimates house prices based on household disposable income, mortgage interest rates and fiscal effects. The long-term trends are calculated in all cases using a statistical one-sided Hodrick-Prescott filter with a smoothing parameter equal to 400,000. These indicators and the two-year rate of change in house prices have an equilibrium value of 0.

c Breakdown of the factors that contribute to the quarterly changes in indicator (iii) in Chart 3.3.1 (see Note b). All are expressed in real terms.

which has not yet fully reversed (see Chart 3.3.2). Together with the indicators usually assessed in the FSR, the current edition also considers the two-year house price growth rate. This rate has been found to constitute a robust leading indicator of a build-up of risk in the real estate market, thus supplementing the evidence provided by the remaining indicators considered, which is particularly important in the present highly uncertain environment. It is currently showing a rising trend, but with values near its equilibrium level.

The tightening of financial conditions following the ECB's interest rate increases and the higher risk premia could prompt a moderation in the real estate market and reverse the incipient signs of imbalances. Year-on-year house price growth stabilised at high levels in Q2 – slightly above 8% but below the 8.5% observed in Q1 (see Section 1.2.2 for further details). The deceleration in housing transactions in July and August, as compared with the growth observed in Q2, may also indicate an incipient weakening of demand in the residential sector, which could ease the price pressures but will not be confirmed until new information for more months becomes available. Therefore, close monitoring of developments in this market will have to continue.

No warning signals are discernible in other complementary indicators for CCyB decisions. In particular, there have been no significant upturns in the risk indicators associated with alternative estimations of credit imbalances or the current account balance.

Credit standards in relation to collateral values have not deteriorated, but loan-to-income ratios for mortgages indicate a certain degree of vulnerability for some household segments. The ratios measuring the leverage of new borrowers, e.g. the loan-to-price (LTP) ratio, held stable at the levels seen in recent years. Nor has the proportion of credit in the highest leverage bracket increased (see Chart 3.4.1). However, both the house price-to-income ratio[6] and the loan-to-income (LTI) ratio – the closest indicators of borrowers' ability to pay – have risen steadily since the end of the global financial crisis (see Chart 3.4.2). An additional deterioration in income due to a potential downturn in activity could stress these ratios further. Also significant are the increased LTI ratios in lower income quintiles, which may experience more severe payment difficulties (see Chart 3.4.3). On the historical information available in Spain and the evidence available in other European countries, such high-LTI mortgages entail higher default risk, particularly in adverse macroeconomic scenarios (see Box 3.1).

Mortgage interest rate spreads over reference rates have continued to narrow in the recent period. The latest data available point to a moderate pick-up in interest rates in new fixed-rate mortgages, a segment that continues to account for the bulk of mortgage market activity. However, reference rates are rising more quickly, meaning that mortgage loan spreads narrowed further in 2022 H1, and more quickly than in 2021 (see Chart 3.4.4 and Box 1.2 in Chapter 1). Indeed, on the information available, the spread stands at its lowest level in recent years. The spread for floating-rate mortgages likewise contracted, albeit to a lesser extent.

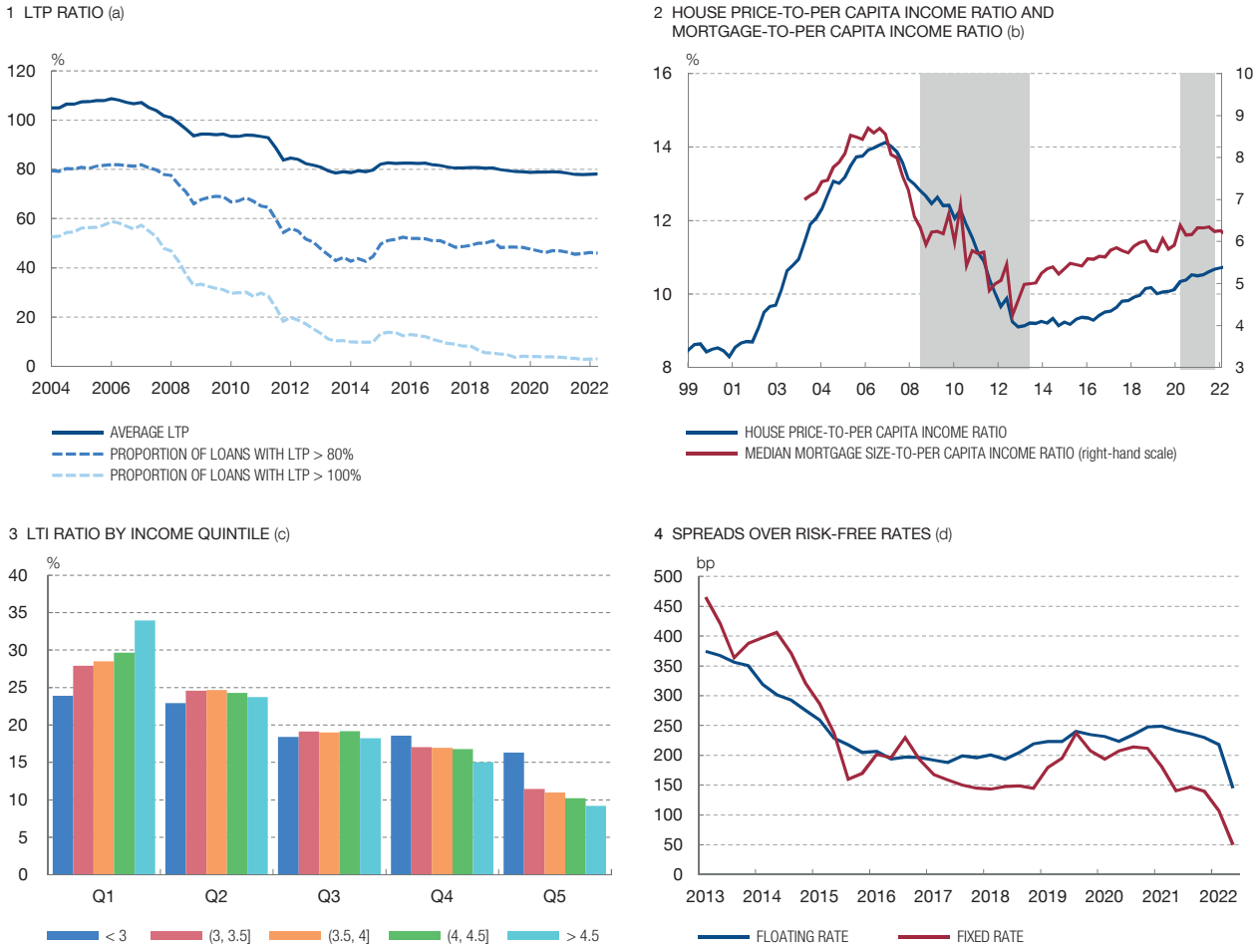
Broadly speaking, there has been a limited pass-through of the increase in market reference rates to interest rates in new mortgage lending. This is so despite the widespread tightening of financial conditions in the markets, higher inflation and the deterioration in the macroeconomic outlook, which drive up the likelihood of adverse scenarios that entail a higher probability of default for mortgage borrowers. Although banks can generate higher income from these customers through the sale of other associated products, an appropriate loan origination policy calls for interest rates that duly reflect the cost of the funds and the risks incurred in the loan. The widespread tightening of the financial environment is likely to work towards reversing this trend of narrowing spreads in the coming quarters.

6 Statistical filters are applied to this data series to calculate the indicator of imbalances (ii) included in Chart 3.3.1.

Chart 3.4

MORTGAGE CREDIT STANDARDS IN RELATION TO COLLATERAL VALUES HAVE NOT DETERIORATED, BUT THE LTI DISTRIBUTION INDICATES SOME VULNERABILITY. MOREOVER, INTEREST RATE SPREADS HAVE NARROWED IN THIS SEGMENT

Mortgage credit standards in relation to collateral values, such as the loan-to-price (LTP) ratio, have been stable. However, the ratios more directly linked to borrowers' income, such as the loan-to-income (LTI) ratio, are on an upward path. Further, households in lower income quintiles have higher LTI ratios. Interest rate spreads have continued to narrow up to the start of 2022 Q4, particularly in fixed-rate mortgages. The general tightening of the financial environment could reverse this trend of narrowing spreads in the coming quarters.



SOURCES: Banco de España, Colegio de Registradores, INE, Agencia Tributaria and Refinitiv.

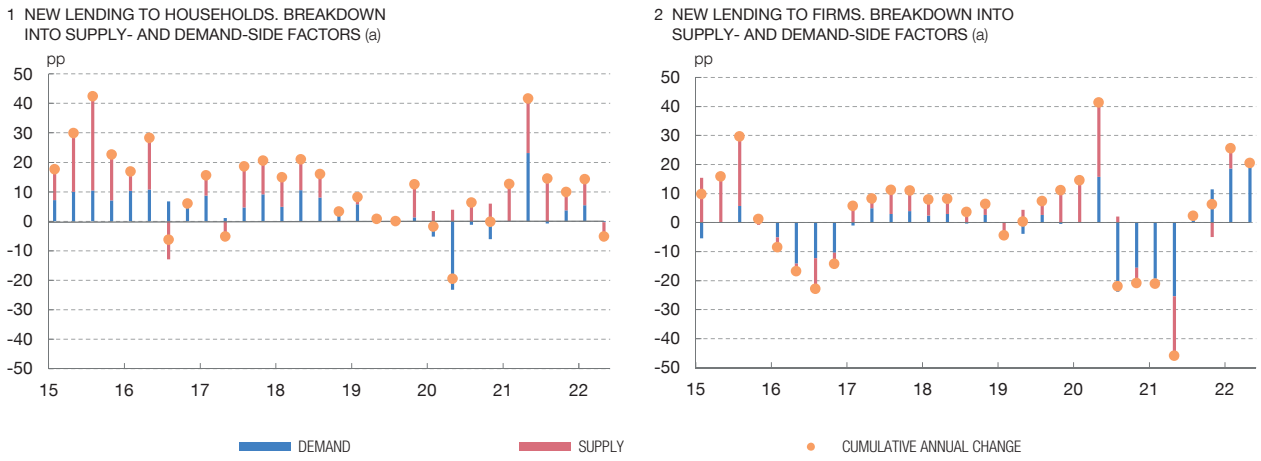
a The LTP ratio is the amount of the mortgage principal relative to the registered property price. The average values are weighted by the capital of each mortgage. The indicator is calculated for a sample of new mortgages. Data up to 2022 Q2 (not all loans for this last quarter are yet available).
b Property prices calculated based on price per square metre in the current quarter. All magnitudes are expressed in real terms. Per capita income refers to disposable income. The shaded areas represent crisis periods.
c LTI at origination of mortgage loans existing in August 2022 and originated since 2000, by income quintile. The LTI ratio is the amount of the mortgage principal at origination relative to the gross income of households by postcode, drawn from State tax revenue service (Agencia Tributaria) data (which do not include the Basque Country or Navarre) for each year of origination. For each LTI level (e.g. LTI<3), the chart shows its distribution across household income quantiles.
d Average interest rate spread of each new mortgage over the euro IRS curve. For floating-rate mortgages, the 1-year IRS rate is used to calculate the spread; for fixed-rate mortgages, the term equivalent to the mortgage term is selected. Data up to 2022 Q2.

New lending to households contracted in the second quarter of 2022, mainly due to supply-side factors. In 2022 Q2, new lending to households decreased for the first time since 2020 Q2. The econometric model estimates show that on this occasion the decline was driven mainly by supply-side factors, in contrast

Chart 3.5

THE TIGHTENING OF SUPPLY-SIDE CONDITIONS REDUCED NEW LENDING TO HOUSEHOLDS IN 2022 Q2, WHILE DEMAND-SIDE FACTORS DROVE NEW LENDING TO FIRMS

The reduction in new lending to households in 2022 Q2 owed mainly to supply-side factors, particularly those relating to a tightening of credit standards in consumer lending. Meanwhile, new lending to firms continued to rise, fuelled by demand-side factors associated largely with the cost differential between market funding and bank loans (which, for the time being, only partially reflect the increase in market rates). This lending growth appears to stem from firms covering their liquidity needs and from precautionary reasons in response to the heightened uncertainty.



SOURCE: Banco de España.

a Cumulative annual change. Breakdown of the supply- and demand-side effects obtained using a structural vector autoregressive (S-VAR) model estimating the short-term relationships between credit and interest rate spreads, allowing for simultaneous shocks between the two variables. The models are estimated separately for lending to households and to firms. Data on new lending in euro area countries are used. New lending excludes renegotiations, overdrafts and credit card balances. For further details, see Box 1 in P. Alves, F. Arrizabalaga, J. Delgado, J. Galán, E. Pérez-Asenjo, C. Pérez Montes and C. Trucharte (2021), "Recent developments in financing and bank lending to the non-financial private sector", Analytical Articles, *Economic Bulletin* 1/2021, Banco de España.

with two years earlier (see Chart 3.5.1). This appears to be the result of an incipient tightening of credit standards by banks, as signalled by the Bank Lending Survey for 2022 Q2.[7] This sign of tightening access to financing for households has not yet translated into a significant tightening of mortgage price conditions for households accessing such loans (see Chart 3.4.4). Moreover, the decline in loans to households is concentrated in consumer lending.

In contrast to the household segment, new loans to firms continued to grow in 2022 H1, almost exclusively due to demand-side factors. Supply-side factors played a smaller role in the cumulative change in lending to firms to June 2022. Indeed, the considerable growth in lending to this segment was almost exclusively driven by demand-side factors (see Chart 3.5.2). This increased demand for bank loans may owe to the cost differential against market funding, due to the increase in market rates only partially passing through to bank lending. The growth in lending appears to stem from non-financial corporations covering their liquidity needs and

7 See A. Menéndez and M. Mulino (2022), "July 2022 Bank Lending Survey in Spain", Analytical Articles, *Economic Bulletin* 3/2022, Banco de España. The responses to the Bank Lending Survey for Q3 indicate an additional widespread tightening of credit supply conditions. See A. Menéndez and M. Mulino (2022). "October 2022 Bank Lending Survey in Spain". Analytical Articles, *Economic Bulletin* 4/2022, Banco de España.

also building up liquid assets given the present uncertainty. Indeed, bank deposits held by firms have also been more buoyant in recent months.

Based on this set of macro-financial indicators and the heightened uncertainty in the current macroeconomic environment, the Banco de España has decided to hold the CCyB rate at the minimum level of 0%. First of all, the persistence of the effects of the war in Ukraine, the geopolitical tensions and the uncertainty associated with the drastic reduction in the supply of Russian gas to Europe have increased the likelihood of adverse macroeconomic shocks in the coming months. Second, the inflationary tensions and the monetary measures needed to curb them will, respectively, lead to a deterioration in borrowers' real income and to a tightening of financing conditions. In view of this adverse environment – with a far higher probability of scenarios of very low growth or even recession –, holding the CCyB rate at 0% is considered the appropriate macroprudential response. However, the Banco de España is closely monitoring the vulnerabilities identified in the real estate market, and will take appropriate measures should they be heightened.

Holding the CCyB at 0% is consistent with Warning 7/2022 of 22 September 2022 of the European Systemic Risk Board (ESRB) on vulnerabilities in the EU financial system. In that Warning, the ESRB indicates that the risks to financial stability in the EU have increased significantly owing to the deterioration in the macroeconomic outlook, a sharp fall in asset prices, and the implications of these developments for credit quality. With this in mind, the ESRB urges the relevant authorities to preserve or enhance the resilience of the financial sector so that it can continue to support the real economy. The ESRB's assessment is consistent with that of the Banco de España on the macro-financial environment. As noted in the ESRB Warning and in an ECB Governing Council statement,[8] the national macroprudential policy response should be tailored to each country's specific, structural and cyclical conditions and, especially, the intensity of the imbalances detected. Against this backdrop, the decision to maintain the CCyB at 0% is based on the specific analysis of conditions in Spain.[9]

Despite the high level of uncertainty, various European countries have decided to raise their CCyB rates in recent months. The build-up of cyclical systemic imbalances continued in 2022 H1 in some European economies, leading their authorities to tighten certain macroprudential requirements. In some cases, bearing in mind that banks have significant voluntarily buffers and their 2022 results are

8 See "Governing Council statement on macroprudential policies" of 2 November 2022.

9 According to a structural vector autoregressive model (SVAR), a 0.5 pp increase in the CCyB would trigger a decline both in credit (-0.8 pp) and in GDP (-0.3 pp). This cost is calculated in average terms for a full economic cycle. However, the cost of activating the CCyB would be far higher during a recession, reducing credit by an estimated -1.7 pp and GDP by an estimated -0.8 pp. Moreover, there is a standard 12-month phase-in period once new CCyB rates are announced, which makes activating the CCyB particularly problematic in an environment in which downside risks predominate in the near term.

Table 3.1
RECENT MACROPRUDENTIAL CAPITAL BUFFER MEASURES IN EUROPE (a)

Country	Latest CCyB announced (%)	CCyB implementation date	Latest sectoral SRB announced (%)	Sectoral SRB implementation date
Belgium			9.00 for retail IRB exposures	
Bulgaria	2.00	01.10.2023		
Czech Republic	2.50	01.04.2023		
Denmark	2.50	31.03.2023		
Germany			2.00 for exposures to the residential real estate sector	01.02.2023
Hungary	0.50	01.07.2023		
Ireland	0.50	15.06.2023		
Lithuania	1.00	01.10.2023		
Norway	2.50	31.03.2023		
Slovakia	1.50	01.08.2023		
Slovenia			1.00 for exposures to the residential real estate sector	01.01.2023
Sweden	2.00	22.06.2023		
The Netherlands	1.00	25.05.2023		
United Kingdom	2.00	05.07.2023		

SOURCES: ESRB, BIS and national authorities.

a This table shows CCyB and SRB announcements made after the publication date of the Spring 2022 FSR (27 April 2022). As a general rule, CCyB rate increases are applicable 12 months after their announcement. Denmark and Norway will adopt a CCyB rate of 2% on 31.12.2022, while the Czech Republic announced a CCyB of 2% to be implemented on 01.01.2023. SRB = systemic risk buffer.

expected to improve on those of previous years, these measures have also sought to create macroprudential space to ensure the economies are better placed to withstand potential strains should losses materialise in 2023. Specifically, since the publication of the last FSR, ten national authorities in the EU/EEA plus the United Kingdom have announced decisions to activate or raise their CCyB rates (see Table 3.1).[10] Other authorities have opted to activate measures aimed at addressing vulnerabilities in the real estate sector only, such as the sectoral systemic risk buffer (sSyRB) in Germany and Slovenia, or impose limits on credit standards.

In July 2022 the Banco de España announced[11] the designation of other systemically important institutions (O-SIIs), along with their macroprudential capital buffers applicable in 2023 (see Table 3.2). These banks are subject to additional capital requirements to strengthen their solvency and mitigate the systemic

10 Other European countries had already activated, or announced their intention to raise, the CCyB: Bulgaria, Croatia, Estonia, France, Germany, Iceland, Luxembourg, United Kingdom and Romania. The ESRB website provides a full list of countries where the CCyB is activated.

11 See "The Banco de España updates the list of other systemically important institutions and sets their macroprudential capital buffer rates for 2023", press release of 22 July 2022.

Table 3.2
SPANISH SYSTEMICALLY IMPORTANT INSTITUTIONS AND ASSOCIATED CAPITAL BUFFERS

Legal Entity Identifier (LEI)	Institution	Designation (a)	Capital buffer requirement in 2022 (%)	Capital buffer requirement in 2023 (%)
5493006QMFDDMYWIAM13	Banco Santander, SA	G-SII and O-SII	1.00	1.00
K8MS7FD7N5Z2WQ51AZ71	Banco Bilbao Vizcaya Argentaria, SA	O-SII	0.75	0.75
7CUNS533WID6K7DGFI87	CaixaBank, SA	O-SII	0.375	0.50
SI5RG2M0WQQLZCXKRM20	Banco de Sabadell, SA	O-SII	0.25	0.25

SOURCE: Banco de España.

a G-SII = global systemically important institution. O-SII = other systemically important institution.

adverse effects they might cause to the financial system. The list of four banks designated as O-SIIs (i.e. domestic systemically important banks) has not changed since last year's exercise. The buffers applicable in 2023 remain unchanged for three of the four banks identified as O-SIIs. One bank, CaixaBank, SA, saw its buffer raised to 0.5% due to its merger with Bankia, SA, in March 2021. This buffer recalibration, effective from 1 January 2023, was envisaged in the Banco de España's announcement last year.[12]

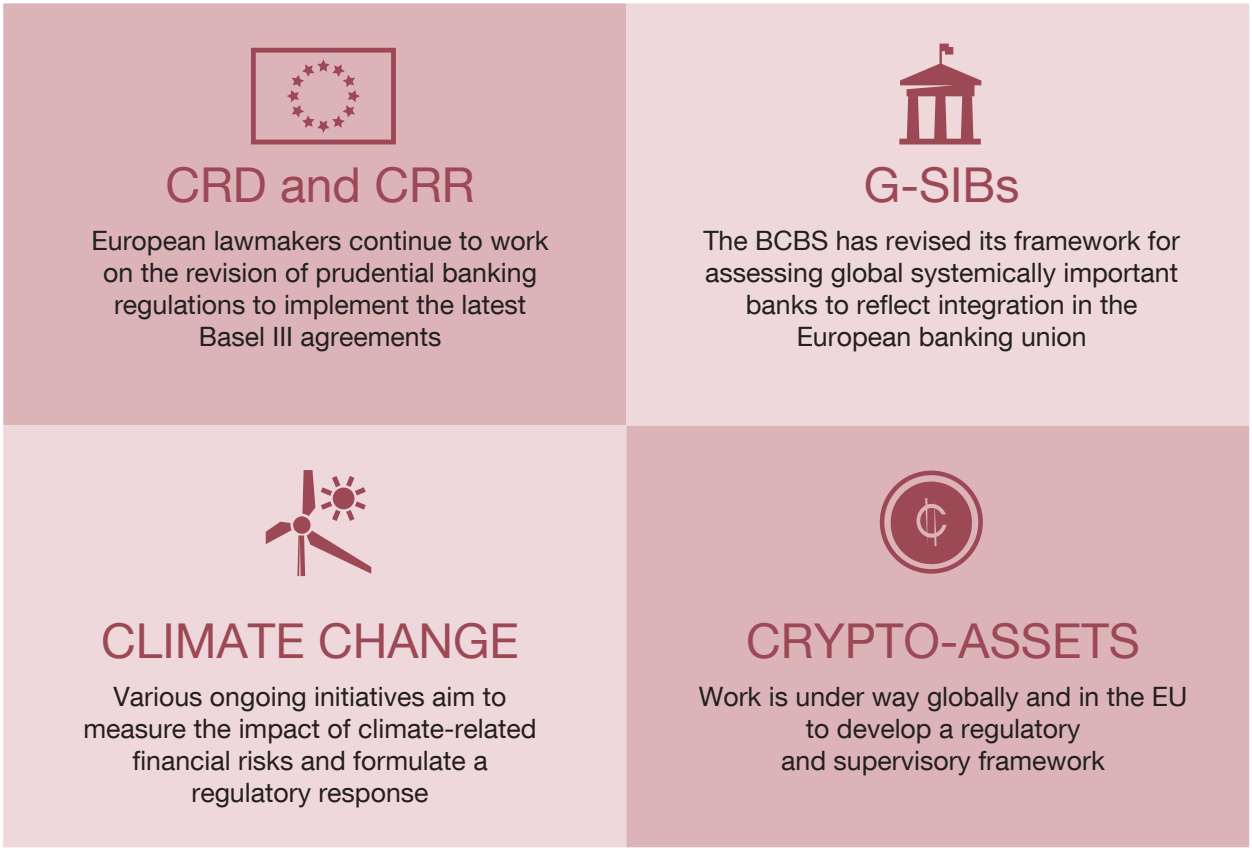
3.2 Regulatory and supervisory developments relevant to financial stability

The legislative process of revising banking regulations to incorporate the latest agreements of the Basel Committee on Banking Supervision (BCBS) continues in the EU. The European Commission's proposal to amend the Capital Requirements Regulation (CRR III) and the Capital Requirements Directive (CRD IV) was published in October 2021. In April the ECB issued an opinion[13] on the legislative proposal to amend the Directive (CRD), having already done so in March with respect to the Regulation (CRR), which welcomes, inter alia, the Commission's proposals to introduce an output floor on minimum capital requirements and to impose stricter environmental, social and governance risk-related requirements on credit institutions. As regards the output floor, whose aim is to improve comparability of banks' risk weightings, thus increasing the credibility of banks' estimations, the Commission's proposal puts forward various mechanisms to regulate the interaction between the minimum capital requirements (Pillar 1) and the setting of Pillar 2 supervisory requirements and macroprudential buffers, in order to avoid a double-counting of risks. The ECB opinion considers that macroprudential buffers, as presently used,

12 See the Banco de España press release of 29 July 2021.

13 See "Opinion of the European Central Bank of 27 April 2022 on the Proposal for a Directive of the European Parliament and of the Council amending Directive 2013/36/EU as regards supervisory powers, sanctions, third-country branches, environmental, social and governance risk (CON/2022/16)".

Figure 3.1
KEY REGULATORY DEVELOPMENTS RELEVANT TO FINANCIAL STABILITY



address macroprudential risks which are different from the output floor's target of reducing risks of excessive variability or lack of comparability of risk weights from the use of internal models by institutions, thereby excluding the possibility of interaction with it. This development, along with other highlights, is summarised in Figure 3.1.

As part of the planned review of the EU macroprudential framework for the banking sector, the European Commission has published a feedback statement on the responses to a recent public consultation[14] aimed at informing a possible legislative proposal. Most of the approximately 50 contributions received by the European Commission to March, from authorities (regulators, central banks and ministries), firms and non-governmental organisations, have focused on buffer usability, cross-country consistency in the use of macroprudential tools and proposals for reviewing the instruments currently available.[15] These comments,

14 See the additional information published by the European Commission in "Targeted consultation on improving the EU's macroprudential framework for the banking sector".

15 The Banco de España, as a member of the Eurosystem and the European System of Financial Supervision (ESFS), was involved in the preparatory discussions for the responses sent by the ECB, the EBA and the ESRB to the European Commission's public consultation.

together with the advisory reports of the ECB, the EBA and the ESRB, will serve as a basis for the European Commission's future draft legislative proposal to amend the CRR and the CRD.

The BCBS has finished revising the framework for evaluating global systemically important banks (G-SIBs) to incorporate the implications of the banking union.[16] With the aim of properly reflecting the level of integration achieved in the banking union – as a supranational jurisdiction with single supervisory and resolution mechanisms – the revised methodology provides for a parallel set of G-SIB scores by reducing cross-border exposures within the banking union by 66%. This adjustment, called ASTRA (Adjustment for STructural Regional Arrangements), is tantamount to recognising that the Single Supervisory Mechanism and the Single Resolution Mechanism are fully operational, but that the third pillar of the banking union – the European Deposit Insurance Scheme (EDIS) – remains to be accomplished. The new parallel systemic importance scores may even entail the reclassification of an institution to a lower bucket (but not its removal from the list) and does not affect the calculation of European institution's scores outside the EU. The announcement of the BCBS was followed by the publication on 27 June of a statement[17] by the ECB fleshing out the application of ASTRA.

The BCBS analysed buffer usability and cyclicality in its second report[18] **on the impact of the Basel reforms.** The report, published in October, argues that the Basel III reforms have played a key role in enabling banks to continue operating amid the various shocks in recent years. The BCBS finds signs of a positive relationship between the size of banks' voluntary buffers (in excess of regulatory requirements) and loan origination. Given that the shocks that may affect the banking sector are manifold and unpredictable – the COVID-19 pandemic being a prime example – the BCBS supports the ability of authorities to set, as a precautionary measure, a positive CCyB rate also in neutral stages of the credit cycle where there is yet no evidence of a build-up of systemic imbalances.[19]

The BCBS also published in June a list of principles[20] **for the effective management and supervision of climate-related financial risks.** The aim is to promote a principles-based approach to improve both risk management by banks and supervisory practices relating to financial risks from climate change. The BCBS

16 See "Basel Committee finalises principles on climate-related financial risks, progresses work on specifying cryptoassets' prudential treatment and agrees on way forward for the G-SIB assessment methodology review" of 31 May 2022.

17 See "Governing Council statement on the treatment of the European banking union in the assessment methodology for global systemically important banks" of 27 June 2022.

18 See "BCBS Report on buffer usability and cyclicality in the Basel framework" of 5 October 2021.

19 See "BCBS Newsletter on positive cycle-neutral countercyclical capital buffer rates" of 5 October 2021.

20 See "BCBS Principles for the effective management and supervision of climate-related financial risks" of June 2022.

seeks to provide a framework for banks and supervisors that allows sufficient flexibility and takes into account the heterogeneity and evolving practices in this area. In tandem, the Financial Stability Board (FSB) has published its first annual report[21] on the progress made by international bodies to address financial risks from climate change.

The ECB and the ESRB published a joint report[22] on the impact of potential future climate risk-related shocks on the European financial system. The report finds that climate risks may spread rapidly and damage both firms and banks, and makes several suggestions for a potential macroprudential policy response, although the debate on the latter is still at an early stage. Moreover, the EBA has submitted a discussion paper[23] for consultation analysing the role of environmental risks within the prudential framework. Among other aspects, the paper studies the possible incorporation of environmental risks into the Pillar 1 prudential framework for banks and investment firms, an issue not without controversy owing to its enormous complexity, since it involves combining a historical approach over short horizons with a forward-looking approach over much longer horizons (for climate risks). On the basis of that discussion paper, the EBA shall prepare a report at the European Commission's proposal, in the framework of the current CRR review, which will assess the prudential treatment of exposures subject to environmental and/or social impacts.

The BCBS published the second consultation document on the prudential treatment of banks' exposures to crypto-assets. The second public consultation[24] on the prudential treatment of crypto-assets ended on 30 September 2022. The BCBS intends to set standards on this matter, on the basis of the submissions, before the end of the year. Moreover, due to developments in crypto-asset markets in recent months, in March the European Supervisory Authorities (EBA, ESMA and EIOPA) published a statement[25] warning about the risks that crypto-assets pose for EU consumers.

Meanwhile, the FSB has submitted for public consultation a proposed framework for the international regulation of crypto-asset activities.[26] This consultation was preceded by a statement[27] in July on the current crypto-asset situation worldwide. In this statement, the FSB highlighted the intrinsic volatility of these instruments and their structural vulnerabilities and growing interconnectedness

21 See "FSB Roadmap for Addressing Financial Risks from Climate Change" of July 2022.

22 See "Report on the macroprudential challenge of climate change" of July 2022.

23 See "EBA launches discussion on the role of environmental risks in the prudential framework", press release of 22 May 2022.

24 See "Basel Committee publishes second consultation document on the prudential treatment of banks' cryptoasset exposures" of June 2022.

25 See the joint press release "EU financial regulators warn consumers on the risks of crypto-assets".

26 See the press release "FSB proposes framework for the international regulation of crypto-asset activities" of 11 October 2022.

27 See "FSB issues statement on the international regulation and supervision of crypto-asset activities" of July 2022.

with the traditional financial system, together with the need to ensure they are subject to robust regulation and supervision. In October, the FSB issued: (i) a set of recommendations aimed at promoting consistency of various regulatory and supervisory approaches to crypto-asset activities and markets and at strengthening coordination and information sharing among authorities; and (ii) a review of the high-level recommendations for the regulation, supervision and oversight of stablecoins[28] in order to more effectively address the attendant risks to financial stability.

At European level, the Council presidency and the European Parliament reached a provisional agreement on the markets in crypto-assets regulation (MiCA) proposal.[29] This regulation, which covers issuers of unbacked crypto-assets and stablecoins[30] as well as trading, advisory and exchange services and the wallets where crypto-assets are held, will protect investors and preserve financial stability, while allowing innovation and fostering the attractiveness of the crypto-asset sector. MiCA will also cover any type of market abuse, notably market manipulation and insider dealing. Although some Member States already have national legislation for crypto-assets, there was no specific regulatory framework at EU level, so this is a significant step towards harmonised regulation at European level. However, it should be noted that the implementation of MiCA will not be immediate and that some of the trading in these instruments (such as DeFi)[31] is not covered, given the rapid pace of change in these technologies.

The ESRB submitted its proposals in the context of the European Commission's review of the European Market Infrastructure Regulation (EMIR).[32] Specifically, the ESRB proposes changes to the current central counterparty (CCP) tiering framework, the frequency of reviews and the way the qualitative and quantitative criteria are taken into consideration, which should allow for more professional judgement and flexibility in the tiering framework. This would better reflect the systemic relevance certain third country CCPs (including those from the UK) have for the EU or for one or more of its Member States. The ESRB also includes additional proposals to further strengthen the EU framework for central clearing aimed primarily at mitigating financial stability risks.

The European Commission continued its review of the Mortgage Credit Directive (MCD). In response to the consultation on the macroprudential framework,

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28 See also the special chapter on crypto-assets of the Banco de España's Spring 2022 FSR.

29 See the press release "Digital finance: agreement reached on European crypto-assets regulation (MiCA)" of June 2022.

30 Stablecoins are backed by assets and have automatic value stabilisation mechanisms. See C. Catalini and A. de Gortari (2021), "On the Economic Design of Stablecoins".

31 Decentralised Finance (DeFi) is an alternative financial infrastructure to the banking system, based on the use of smart contracts in decentralised networks, primarily using the unbacked crypto-asset Ethereum, with the aim of replicating the functioning of financial products such as debt contracts, derivatives and asset management without the formal contractual framework of traditional finance.

32 See "Letter on ESRB view on the targeted EMIR review with respect to central clearing in the EU" of July 2022.

the ESRB considers[33] that borrower-based measures (BBMs), such as limits to loan-to-income (LTI), should be included in the MCD as well as in the CRD. Among other aspects, the response of the ESRB highlights that including these measures would allow authorities to apply BBMs to loans granted by all types of lenders (including insurance companies, investment funds and pension funds), thus eliminating the possibility of regulatory arbitrage. The EBA's response[34] to the consultation suggests, among other things, including BBMs in the information provided to consumers to promote responsible lending and borrowing while contributing to financial stability.

Lastly, at the national level, it should be highlighted that the Banco de España submitted a draft Circular on the Central Credit Register (CCR) for public consultation in October. The main objective of the draft regulation[35] is to adapt the current Banco de España Circular 1/2013 of 24 May 2013 on the Central Credit Register to various changes introduced by Order ETD/600/2022 of 29 June 2022 modifying the dates on which the reduction of exemptions from reporting to the CCR will enter into force. As a result, from 2023 reporting institutions will have to report to the CCR, on an individual basis, all transactions of borrowers whose cumulative exposure to the institution is equal to or exceeds €3,000. This lower reporting threshold will increase the coverage of the information available in the CCR and allow the Banco de España and the institutions to conduct more comprehensive and thorough analyses of current and future borrowers' credit quality.

33 See "ESRB response to the European Commission consultation on the review of the mortgage credit directive" of 31 March 2022.

34 See "EBA replies to European Commission's call for advice on the Mortgage Credit Directive review" of 24 June 2022.

35 See "Draft Banco de España Circular amending Banco de España Circular 1/2013 of 24 May 2013 on the Central Credit Register" of 3 October 2022 (in Spanish only).

Box 3.1

THE EFFECT OF CREDIT STANDARDS FOR MORTGAGE LOANS ON CREDIT GROWTH AND ON DEFAULT RISKS ASSUMED

A bank's lending policy sets out loan terms and conditions such as loan amount, interest rate, term, collateral and acceptable financial ratio levels. The latter include, in particular, the loan-to-income (LTI) and the loan-to-value (LTV) ratios.

The empirical evidence available globally shows that looser credit standards in good times have benefits in terms of stronger activity growth,[1] but may also lead to the build-up of vulnerabilities, specifically to the deterioration in the credit quality of bank loans.[2] This might exacerbate the adverse effects on financial stability and on real activity in crisis periods. In other words, credit standards could influence credit cyclicality by directly affecting credit supply.[3] This requires ongoing monitoring and the use by macroprudential authorities of tools limiting too loose or too tight credit standards at different stages of the financial cycle.[4]

The various segments in the loan portfolio have different risk characteristics and a different degree of systemic importance. Therefore, lending policies should be assessed with an appropriate level of granularity. As a result, the analysis in this box focuses, on the effects of credit standards on the supply of mortgage loans and on the medium-term risks in terms of mortgage loan defaults. The large volume of mortgage lending (in June 2022, housing loans amounted to €503,254 billion, i.e. 45.1% of bank lending to households and firms in Spain) and its influence on economic decisions taken by households (in 2020, 39.3% of Spanish households had debts secured by their real estate properties) strongly warrant an empirical analysis, as comprehensive as possible, of this portfolio to guide macroprudential policy.

Firstly, we use the data on mortgages in Spain between 2000 and 2015, available in the Banco de España's Central Credit Register (CCR). These data are aggregated to obtain the stock of mortgage loans and its growth, at postcode, bank and monthly level. Additionally, new mortgages for the same period (2000-2015) are identified and each one is associated with the average household's net income in the borrower's postcode area (using information from the tax authorities). This allows the LTI ratio for new mortgages to be calculated. Furthermore, the LTV ratio,[5] the interest rate margin at inception of the loan and other loan terms (maturity, amount, etc.) are obtained from the CCR. Lastly, the data on total mortgages and on new mortgages are matched with balance sheet and income statement banking data reported by banks to the Banco de España, and also with macroeconomic data on the change in GDP and in the (overnight) interbank rate.

These data are used to estimate a model for monthly growth in total mortgage lending, based on postcode and time fixed effects,[6] macroeconomic variables, bank characteristics (accounting variables or fixed effects) and terms (LTI, LTV, interest rate margin, etc.) of new loans granted in each postcode area in the preceding month.[7] The estimated impacts of these characteristics thus inform on each bank's supply conditions.[8]

The results of the estimation show that mortgage lending supply increases as banks' credit standards ease.[9] For

1 See P. O. Gourinchas and M. Obstfeld (2012), "Stories of the Twentieth Century for the Twenty-First", *American Economic Journal: Macroeconomics,* Vol. 4(1), pp. 226-265.

2 See A. Mian and A. Sufi (2009), "The Consequences of Mortgage Credit Expansion: Evidence from the U.S. Mortgage Default Crisis", *Quarterly Journal of Economics,* Vol. 124(4), pp. 1449-1496, for the US mortgage market.

3 See G. Dell'Ariccia and R. Marquez (2006), "Lending booms and lending standards", *The Journal of Finance,* Vol. 61(5), pp. 2511-2546.

4 See, for example, Banco de España Circular 5/2021 implementing the macroprudential tools introduced by Royal Decree-Law 22/2018 and Royal Decree 102/2019.

5 The LTV ratio is calculated for a sample of mortgages as those outstanding as at December 2016, since this is the date on which the collateral value was reported for the first time in the CCR.

6 Fixed effects relate to the average growth in each postcode area and month, aggregating all banks, and are intended to capture time-variant local demand.

7 The fixed effects and the time lag in loan term measurement seek to limit the so-called endogeneity issues, i.e. the possibility of their estimated effect on mortgage lending growth being due, at least in part, to non-observable factors which affect mortgage loan features and stock growth.

8 If the model were to replace bank characteristics with bank and month fixed effects, these effects would capture the variation in each bank's domestic supply. The regression of these fixed effects on bank characteristics and new mortgages in each month show that banks adjust their total domestic supply through changes in LTV, maturity and amount, in line with the estimated results for local supply.

9 See also Box 1 of "The Housing Market in Spain: 2014-2019", *Occasional Paper* No 2013, Banco de España, for a micro analysis using data from the Spanish Survey of Household Finances and data at municipality level on the loan-to-price ratio for housing which shows how housing affordability depends on changes in this ratio.

example, a one standard deviation rise (1.7 expressed as a decimal) in the LTI ratio raises lending by 4.3% and, in the case of the LTV ratio (0.39 expressed as a decimal), by 7.5%. Similarly, a one standard deviation increase in loan maturity (by 6 years) or decrease in the interest rate margin (by 0.6 pp) would raise lending by 4.3% and 3.2%, respectively. The effects of changing several standards at the same time are impacted by complementarities and interactions between them. For example, a simultaneous increase of one standard deviation in the LTI and LTV ratios would result in a 12.8% rise in lending (higher than the sum of individual effects). A simultaneous increase in the LTI ratio and the loan maturity (again by one standard deviation) would cause lending to grow by 9% (compared with 8.6% disregarding interactions).

In addition, credit standards become more relevant in good times, especially as regards the LTI ratio. Thus, the impact of the LTI ratio on credit growth is higher in expansionary periods. A one standard deviation increase in GDP growth (2.5 pp) or decrease in the interest rate growth path (1.2 pp) would result in the impact of one standard deviation increases in the LTI ratio on credit growth reaching 8.4% and 6.9%, respectively (see Chart 1). Furthermore, the easing of credit standards would have stronger effects on banks subject to greater information asymmetries, which are identified as those less present in a specific area. For example, the effect of the LTV ratio on lending is larger for banks with a smaller market share or with a more recent presence in the geographical area considered. Thus, an additional one standard deviation decrease in these metrics (1.8 pp and 3.6 years, respectively) would make the LTV ratio easing effect stronger, leading to credit growth of 12.2% and 9.4%, respectively (see Chart 1).

Next, the effect of looser mortgage lending standards on future defaults (for example, higher LTI and LTV ratios) is assessed in a second exercise. The information on Spanish banks in the European DataWarehouse (EDW) – a mortgage-backed securitisation data repository – is used for this purpose. Although this database only contains securitised loans, it has loan-level historical data on the borrowers' individual LTI ratio which are not available from other sources. Specifically, it provides information on more than 232,000 mortgage loans granted from 1999 to

Chart 1
IMPACT OF CREDIT STANDARDS ON RATE OF CHANGE OF MORTGAGE LENDING (a)

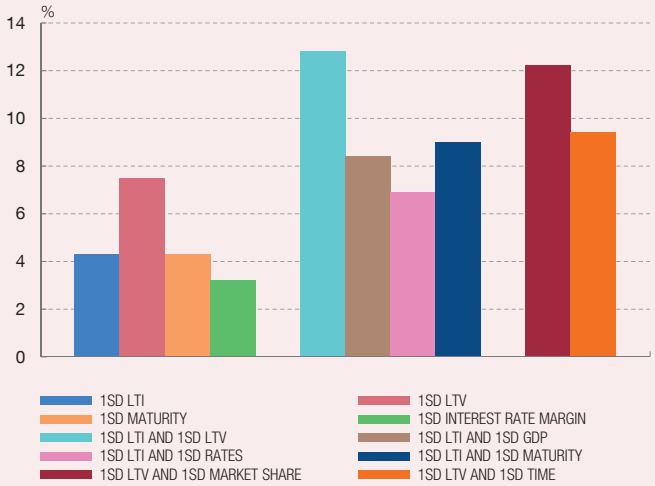
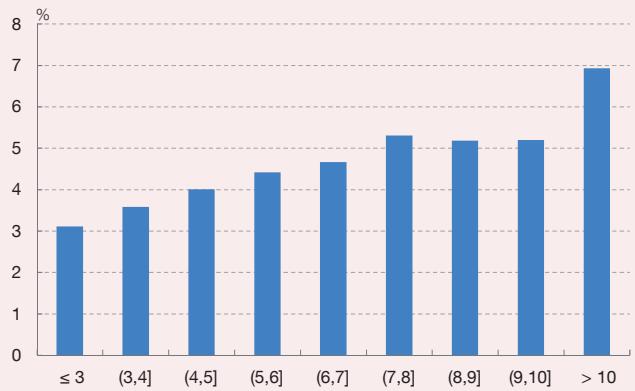


Chart 2
PD OF MORTGAGE LOANS BY LOAN-TO-INCOME RATIO BRACKET (HORIZONTAL AXIS) (b)



SOURCES: Banco de España, Agencia Estatal de Administración Tributaria, INE and European DataWarehouse.

a The chart shows the effect of certain variables on the annualised rate of change of mortgage lending using an econometric model that controls for postcode fixed effects that change over time to capture local demand. Specifically, the chart shows the direct impact of a one standard deviation change in the LTI, LTV, the maturity and the interest rate margin, and the combined impact of some of these changes in terms and conditions and one standard deviation changes in other variables: higher LTV, GDP and longer average maturity, and lower interest rate, interest rate margin, market share and shorter bank presence in the postcode.

b The chart shows the probabilities of default or of foreclosure of a sample of securitised loans, calculated using a duration model that considers loan terms, which include the LTI and LTV ratios, at loan origination. Specifically, the chart shows the survival rates conditioned by the loans' LTI brackets.

Chart 3
PD OF MORTGAGE LOANS BY LOAN-TO-VALUE RATIO BRACKET (HORIZONTAL AXIS) (a)

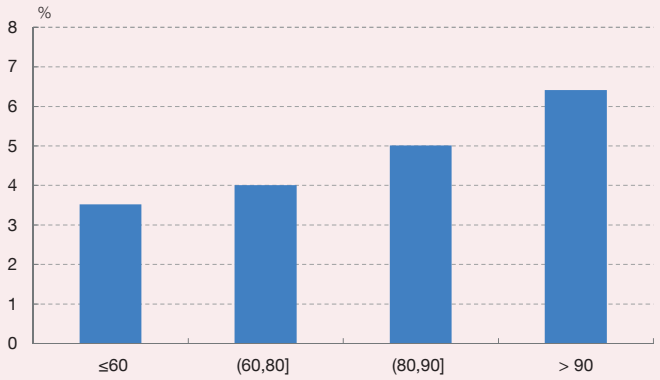


Chart 4
DISTRIBUTION OF THE PDs OF MORTGAGES WITH
LOAN-TO-INCOME AND LOAN-TO-VALUE RATIOS AT DIFFERENT LEVELS (b)

SOURCES: Banco de España and European DataWarehouse.

a The chart shows the probabilities of default or of foreclosure of a sample of securitised loans, calculated using a duration model that considers loan terms, which include the LTI and LTV ratios, at loan origination. Specifically, the chart shows the survival rates conditioned by the loans' LTV brackets.
b The chart shows the density functions of the probabilities of survival of loans with LTIs and LTVs below the median ("Low LTIs AND LTVs") and with LTIs and LTVs above the median ("High LTIs AND LTVs") of a sample of securitised loans. The density functions are approximated using a kernel estimator, which enables a non-parametric estimation and provides a continuous, smoothed graphical representation of the functions.

2007,[10] which allows the influence of mortgage lending standards during the global financial crisis to be measured.

Based on the EDW data, the probability of default (PD) on mortgages is modelled using a duration model, which estimates the probability of survival (inverse of the PD) in the loan life based on its features, such as lender, year of origination, province in which the property is located, certain borrower attributes, such as employment status, and some additional aspects, including the variables under analysis: LTV and LTI ratios at the loan origination date. The probability-of-survival estimation horizon in these exercises is 25 years, which coincides with the current average mortgage term at origination.

The results show that loans with looser credit standards (higher LTI or LTV ratios) generally have lower levels of survival. For example, with all other loan features remaining constant, loans with high LTI ratios – above 6 – have a probability of default 2 pp to 4 pp higher than loans with lower LTI ratios – below 3 – (see Chart 2). The behaviour of the LTV ratio is similar in qualitative terms (see Chart 3). The results reveal some non-linearities, since loans with a very high LTI ratio (above 10) or with a very high LTV ratio (above 90%) show a particularly high risk compared with those standing at lower thresholds.

At the same time, based on an additional exploratory analysis, the probability of default would increase significantly in stressed scenarios of a fall in GDP or interest rate rises, reflecting how mortgages with higher LTI or LTV ratios would be more sensitive to a worsening in economic and financial conditions.

Therefore, a credit expansion prompted by an excessive easing of credit standards (higher LTI and/or LTV ratios) would result in a larger share of troubled loans. Based on the model, ceteris paribus, a one standard deviation increase in the observed average value of the LTI (2.6 expressed as a decimal) or the LTV (0.21 expressed as a decimal) ratio would raise the probability of default by slightly over 0.5 pp. This impact would be stronger taking into account that the borrower population is uneven. Indeed, high LTI or LTV borrowers tend to have lower and more unstable income, which is associated with higher default rates, particularly during periods of stress. This

10 The sample corresponds to mortgages which reflect all the borrowers' income.

circumstance would explain that the expected survival varies considerably for borrowers based on their LTI and LTV ratio levels, even if stress scenarios for the macroeconomic variables are disregarded (see Chart 4). This result points to the significant potential effects of changes in credit standards on the composition of the mortgage loan portfolio.

In sum, this specific analysis of Spanish mortgage loans confirms the hypothesis of opposing effects in the event of an easing of credit standards. Such an easing may boost credit growth, which is associated with stronger activity and greater access to funding for house purchase, but also with increased risk-taking, making households more vulnerable to potential macroeconomic shocks. These results point to the crucial importance of further developing databases and methodologies to obtain in-depth knowledge of the links between credit standards and macro-financial risks.

This analysis also corroborates the important role that macroprudential tools applied to credit standards could play in the event credit standards are eased excessively. Despite the short-term costs to economic growth that would result from establishing limits on a potential loosening of credit standards, the impact of too high LTI and LTV ratios on future credit quality is significant and could have a destabilising effect on the financial system as a whole. In Spain, most credit standards have remained stable at prudent levels in recent years, which reduces the banking sector's vulnerabilities to a potential deterioration in the macroeconomic situation.

Annex 1

CONSOLIDATED BALANCE SHEET
DEPOSIT INSTITUTIONS

Assets	Jun-22	Change Jun-22/Jun-21	% of total assets Jun-21	% of total assets Jun-22
	€m	%	%	%
Cash and balances at central banks	578,531	22.5	12.2	13.8
Loans and advances to credit institutions	240,361	6.3	5.8	5.7
General government	111,040	5.1	2.7	2.6
Other private sectors	2,295,403	6.2	55.6	54.7
Debt securities	542,995	5.0	13.3	12.9
Other equity instruments	32,847	-26.7	1.2	0.8
Investments	22,530	-11.7	0.7	0.5
Derivatives	156,689	32.0	3.1	3.7
Tangible assets	60,018	1.9	1.5	1.4
Other	155,586	0.2	4.0	3.7
TOTAL ASSETS	**4,196,001**	**8.0**	**100.0**	**100.0**
Memorandum items				
Financing to private sector	2,349,423	6.3	56.9	56.0
Financing to general government	556,607	2.9	13.9	13.3
Total NPLs	85,693	-5.9	2.3	2.0
Total NPL ratio	2.4	-31 (b)		

Liabilities and equity	Jun-22	Change Jun-22/Jun-21	% of total assets Jun-21	% of total assets Jun-22
	€m	%	%	%
Balances from central banks	402,179	4.7	9.9	9.6
Deposits from credit institutions	245,535	13.6	5.6	5.9
General government	131,832	16.8	2.9	3.1
Other private sectors	2,397,441	7.8	57.2	57.1
Marketable debt securities and subordinated debt	419,132	3.6	10.4	10.0
Derivatives	150,923	32.8	2.9	3.6
Provisions (including provisions for pensions)	24,076	-13.9	0.7	0.6
Other	174,754	13.7	4.0	4.2
TOTAL LIABILITIES	**3,945,871**	**8.5**	**93.6**	**94.0**
Memorandum items				
Eurosystem net lending (a)	289,689	-0.2	7.5	6.9
Own funds	291,410	3.6	7.2	6.9
Minority interests	11,435	-28.4	0.4	0.3
Valuation adjustments	-52,716	9.2	-1.2	-1.3
TOTAL EQUITY	**250,130**	**0.4**	**6.4**	**6.0**
TOTAL LIABILITIES AND EQUITY	**4,196,001**	**8.0**	**100.0**	**100.0**

SOURCE: Banco de España.

a Difference between funds received in liquidity-providing operations and funds delivered in liquidity-absorbing operations. June 2022 data.
b Difference calculated in basis points.

Annex 2

CONSOLIDATED INCOME STATEMENT DEPOSIT INSTITUTIONS (a)

	Jun-22		Jun-21	Jun-22
	€m	% change Jun-22/Jun-21	% ATA	% ATA
Interest income	55,166	23.1	2.32	2.71
Interest expense	18,884	55.2	0.63	0.93
Net interest income	36,281	11.2	1.69	1.78
Return on equity instruments	768	-3.1	0.04	0.04
Net financial income	37,049	10.8	1.73	1.82
Share of profit or loss of entities accounted for using the equity method	1,722	17.3	0.08	0.08
Net fees and commissions	14,665	11.2	0.68	0.72
Gains or losses on financial assets and liabilities	2,553	-10.3	0.15	0.13
Other operating income (net)	-1,094	—	0.00	-0.05
Gross income	54,896	7.8	2.63	2.69
Operating expenses	25,805	-1.9	1.36	1.27
Net operating income	29,091	18.3	1.27	1.43
Impairment losses	7,687	3.3	0.38	0.38
Other provisioning expense (net)	1,340	-58.9	0.17	0.07
Other gains or losses (net)	-2,421	—	0.21	-0.12
Profit before tax (including discontinued operations)	17,642	-2.2	0.93	0.87
Net profit	12,489	-9.3	0.71	0.61
Memorandum item				
Profit attributable to the controlling entity	11,706	-6.5	0.65	0.57

SOURCE: Banco de España.

a The consolidated income statement includes pro-forma information pertaining to the months of activity of a significant institution absorbed in 2021 through a merger process.

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SYMBOLS AND ABBREVIATIONS

ATAs	Average total assets
BBMs	Borrower-based measures
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
bn	Billion
bp	Basis points
CBQ	Banco de España Central Balance Sheet Data Office Quarterly Survey
CCP	Central counterparty
CCR	Banco de España Central Credit Register
CCyB	Countercyclical capital buffer
CET1	Common Equity Tier 1
CLOs	Collateralised loan obligations
CNMC	Comisión Nacional de los Mercados y la Competencia (National Commission on Markets and Competition)
CoCos	Contingent convertible bonds
COVID-19	Coronavirus disease 2019
CPI	Consumer Price Index
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
DeFi	Decentralised Finance
DFR	Deposit facility rate
DIs	Deposit institutions
EBA	European Banking Authority
EBAE	Encuesta del Banco de España sobre la Actividad Empresarial (Banco de España Business Activity Survey)
ECB	European Central Bank
EDIS	European Deposit Insurance Scheme
EDW	European DataWarehouse
EEA	European Economic Area
EFF	Encuesta Financiera de las Familias (Spanish Survey of Household Finances)
EMIR	European Market Infrastructure Regulation
ESFS	European System of Financial Supervision
ESMA	European Securities and Markets Authority
ESRB	European Systemic Risk Board
€STR	Euro short-term rate
EU	European Union
EURIBOR	Euro Interbank Offered Rate
FLESB	Forward-looking exercise on Spanish banks
FOMC	Federal Open Market Committee
FSB	Financial Stability Board
FSR	Financial Stability Report
GDP	Gross domestic product
G-SIBs	Global systemically important banks
G-SIIs	Global systemically important institutions
GVA	Gross value added
H	Half-year
HICP	Harmonised Index of Consumer Prices
ICO	Instituto Oficial de Crédito (Official Credit Institute)
ID	Data obtained from individual financial statements
IGAE	Intervención General de la Administración del Estado (National Audit Office)
IIP	International investment position
IMF	International Monetary Fund
INE	Instituto Nacional de Estadística (National Statistics Institute)
IOSCO	International Organization of Securities Commissions
IRS	Interest-rate swap
LSIs	Less significant institutions
LTI	Loan-to-income ratio
LTP	Loan-to-price ratio
LTV	Loan-to-value ratio
m	Million
MCD	Mortgage Credit Directive
MiCA	Markets in Crypto-assets Regulation
MMSR	Money Market Statistical Reporting
MREL	Minimum Requirement for own funds and Eligible Liabilities
NBER	National Bureau of Economic Research
NDERs	Narrowly defined effective rates
NFCs	Non-financial corporations
NGEU	Next Generation EU
NPLs	Non-performing loans
OIS	Overnight Interest Swap
O-SIIs	Other systemically important institutions
P2G	Pillar 2 Guidance
PD	Probability of default
PER	Price-to-earnings ratio
PMI	Purchasing Managers' Index
pp	Percentage points
Q	Quarter
q-o-q	Quarter-on-quarter
ROA	Return on assets
ROE	Return on equity
RWAs	Risk-weighted assets
SCR	Solvency Capital Requirement
SHSS	Securities Holdings Statistics by Sector
SICR	Significant increases in credit risk
SIs	Significant institutions
SLIs	Specialised lending institutions
SMEs	Small and medium-sized enterprises
SNP	Senior non-preferred
SPEs	Special purpose entities
SRI	Systemic risk indicator
SSM	Single Supervisory Mechanism
TLTRO III	Targeted longer-term refinancing operations
TPI	Transmission Protection Instrument
VAR	Vector autoregression
WUI	World Uncertainty Index
y-o-y	Year-on-year

ISO COUNTRY CODES

AT	Austria	DE	Germany	IE	Ireland	NL	Netherlands
AU	Australia	DK	Denmark	IT	Italy	NO	Norway
BE	Belgium	EE	Estonia	JP	Japan	PL	Poland
BG	Bulgaria	ES	Spain	KR	South Korea	PT	Portugal
BR	Brazil	FI	Finland	KY	Cayman Islands	RO	Romania
CA	Canada	FR	Francia	LT	Lithuania	SE	Sweden
CH	Switzerland	GB	United Kingdom	LU	Luxembourg	SI	Slovenia
CL	Chile	GR	Greece	LV	Latvia	SK	Slovakia
CN	China	HR	Croatia	MT	Malta	TR	Turkey
CY	Cyprus	HU	Hungary	MX	Mexico	US	United States
CZ	Czech Republic						